

BATTLESHIPS

OF THE UNITED STATES NAVY

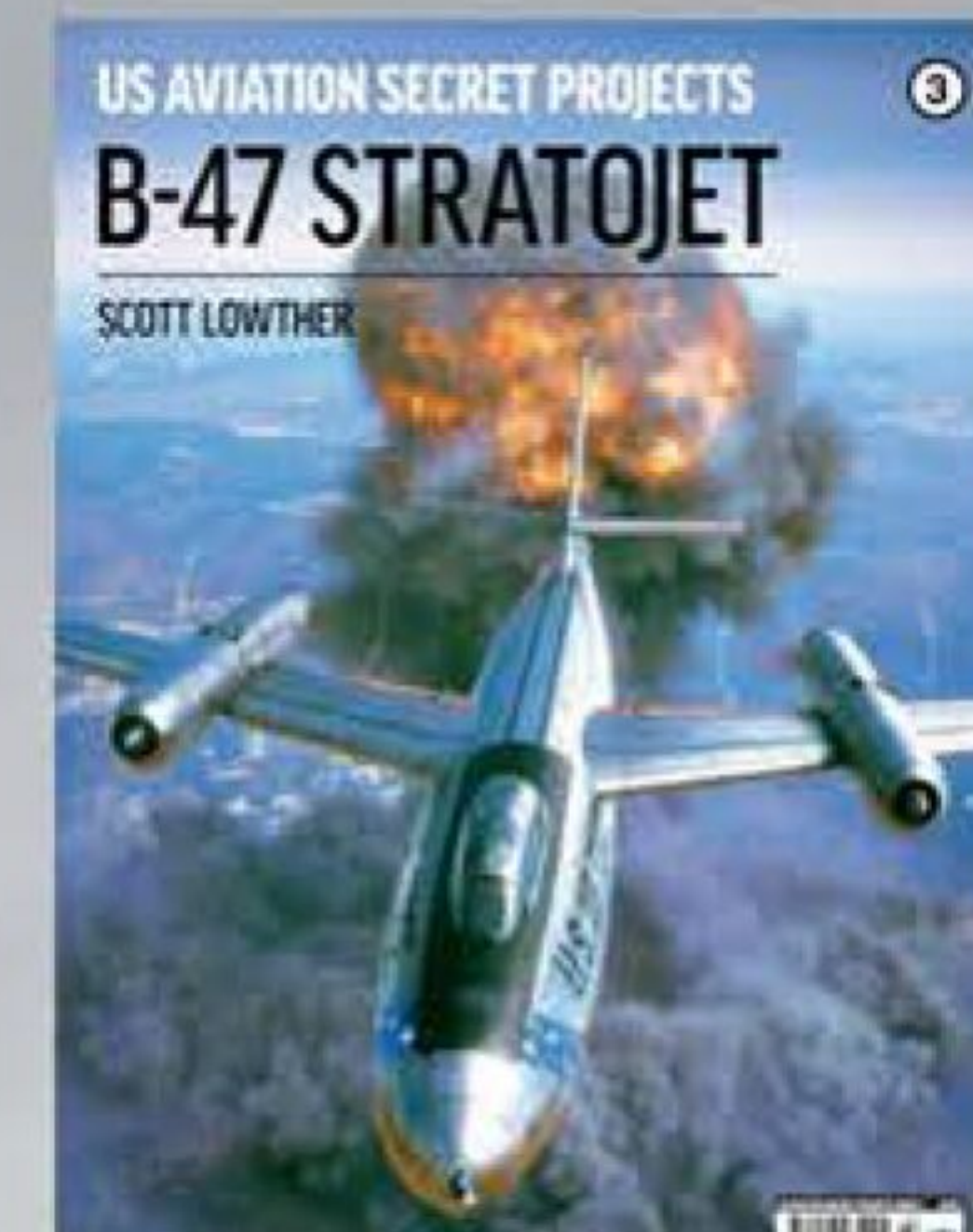
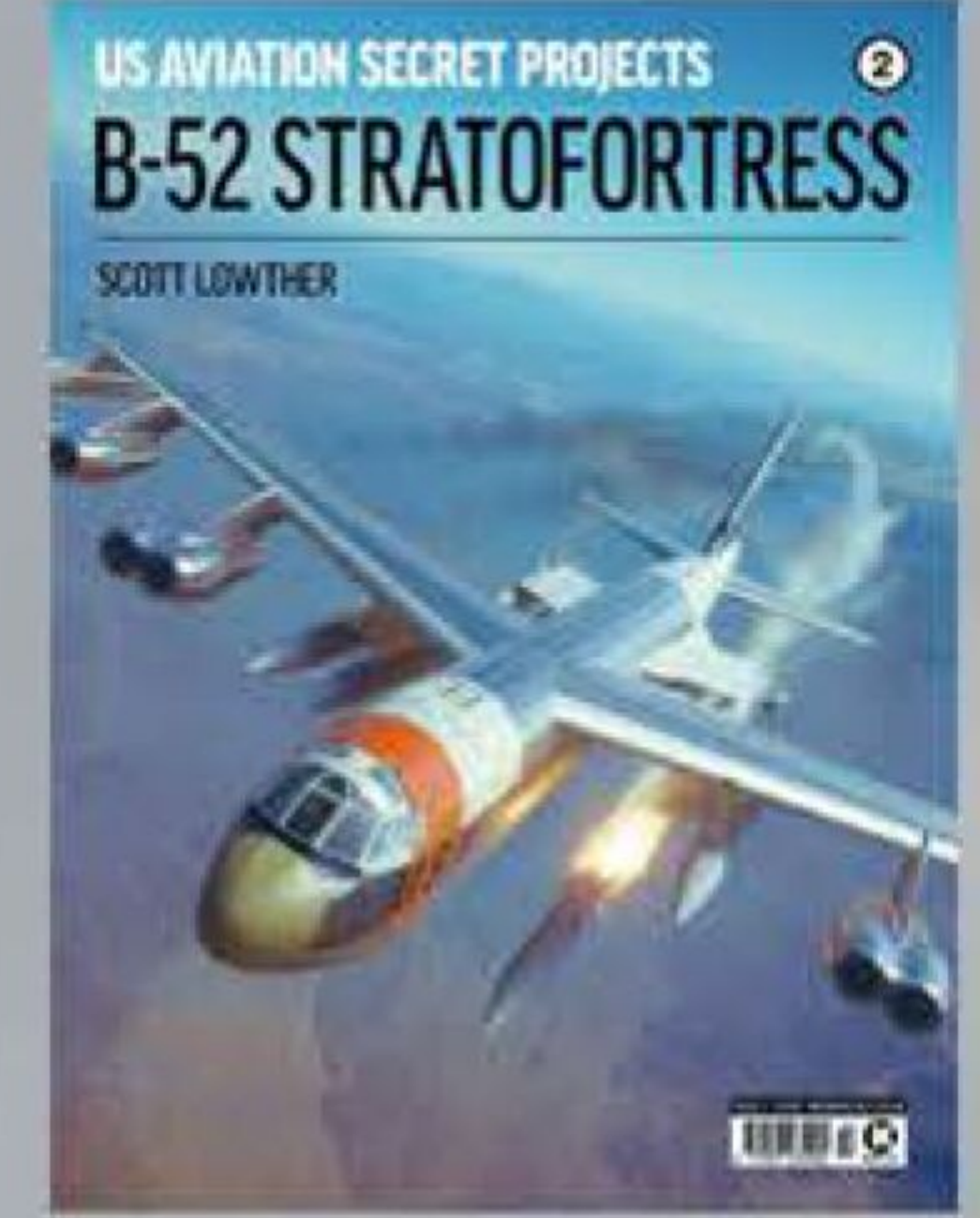
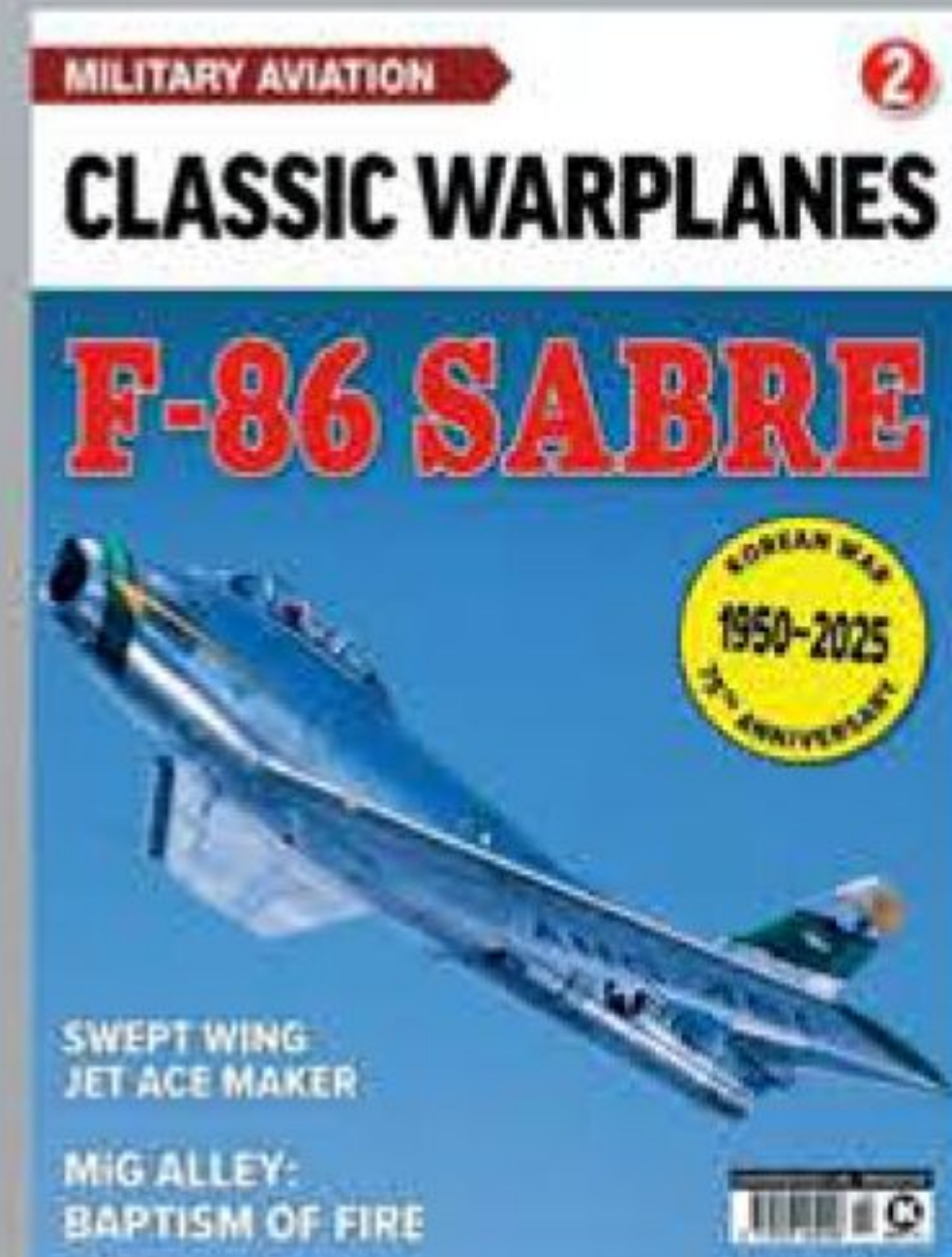
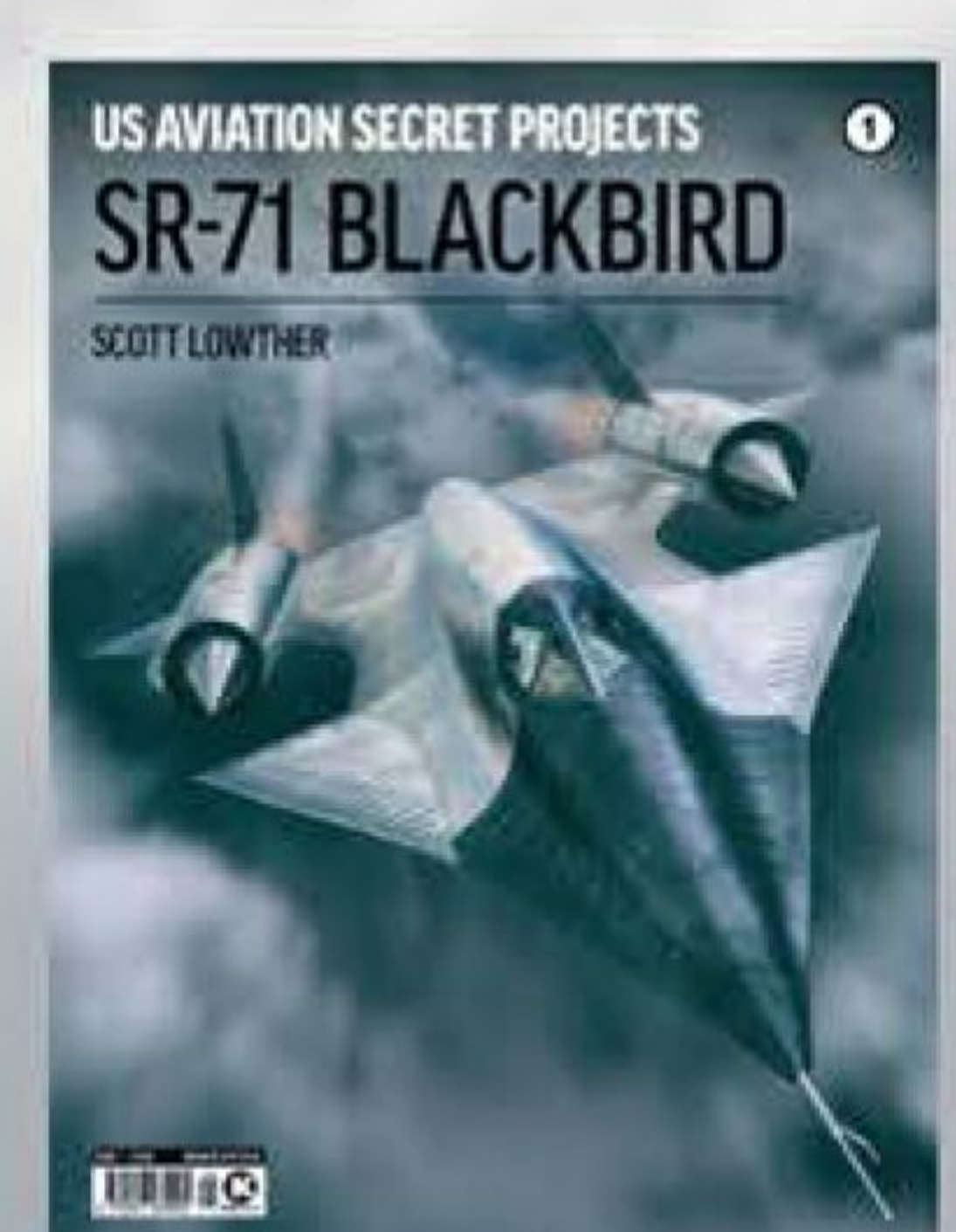
**COMPLETE HISTORY OF
AMERICA'S BIG GUNS AT SEA**

PATRICK BONIFACE & NICHOLAS LEACH

£9.99

ISBN 978-1-917518-66-6
9 781917 518666

DISCOVER THE ORIGINS, EVOLUTION AND OPERATIONAL SERVICE OF THE WORLD'S FINEST COMBAT AIRCRAFT



AVIATION
HISTORY
UNCOVERED

SHOP THE COLLECTION HERE

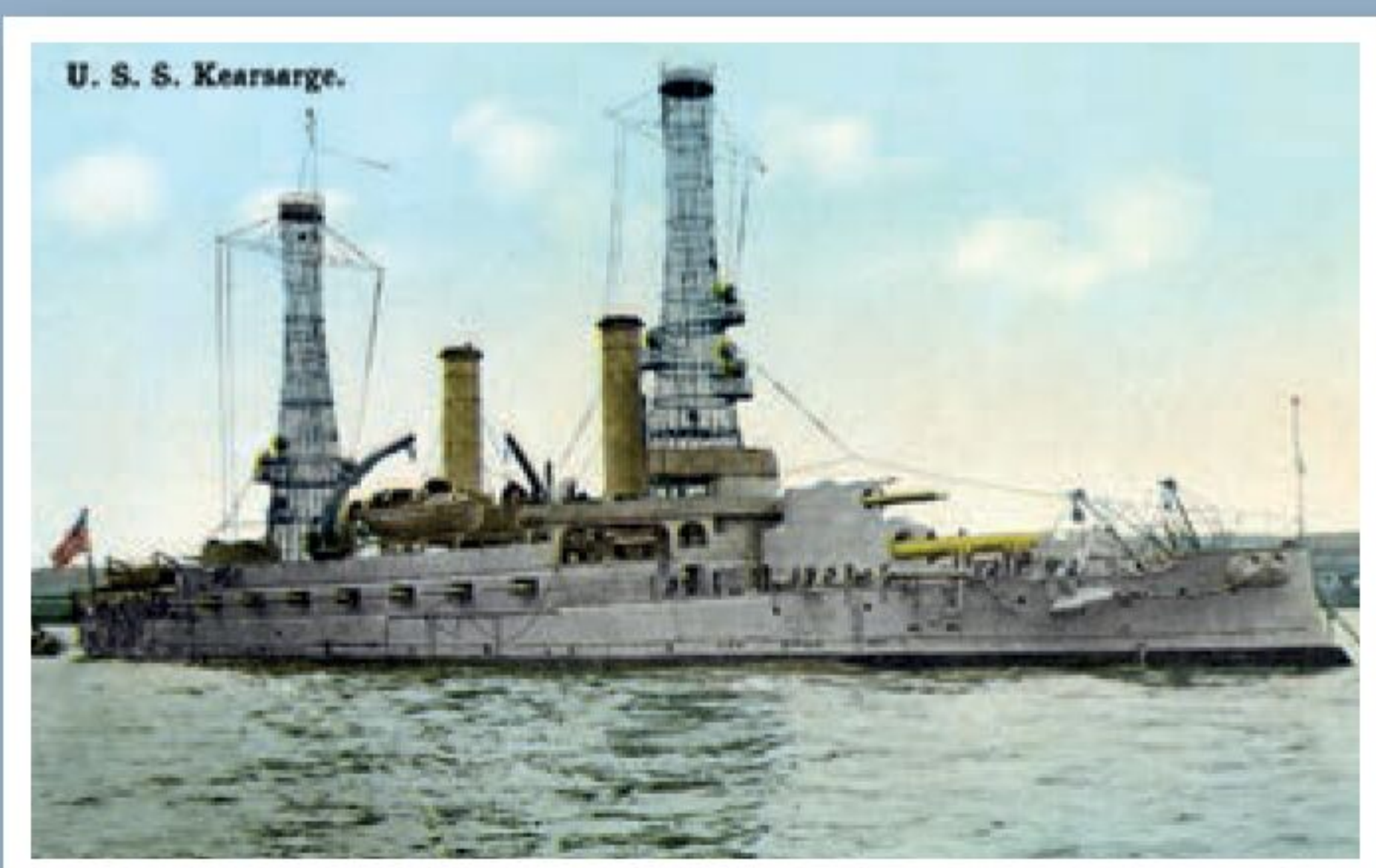
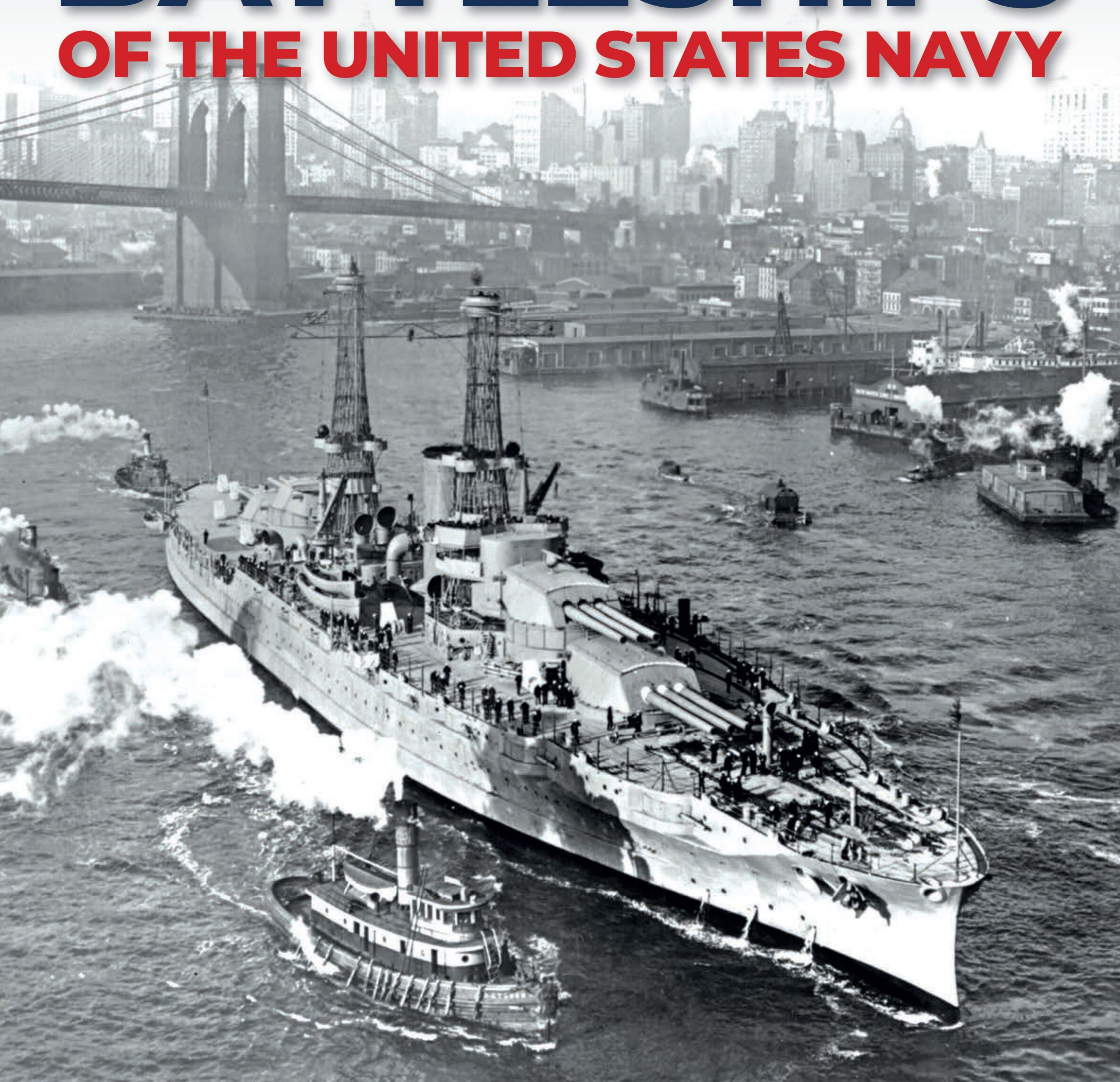
VISIT shop.kelsey.co.uk/AVIATION
CALL 01959 543 747 & QUOTE AVIATION



SCAN ME

BATTLESHIPS

OF THE UNITED STATES NAVY



Published by Kelsey Media, The
Granary, Downs Court, Yalding Hill,
Yalding, Kent ME18 6AL
T > 01959 541444
W > www.kelsey.co.uk

Author: Patrick Boniface
Editor: Nicholas Leach
Production: Foxglove Publishing
Imagery: Courtesy of US Navy and
US National Archives

Production Director: Steve Wright
Retail Sales Director: Steve Brown
Kelsey Publishing Ltd
Registered No. 02387149

© 2026. All rights reserved.
Reproduction in whole or in part
is forbidden except with prior
permission in writing from the publisher.
The publisher cannot accept
responsibility for errors in articles or
advertisements. The views expressed
are not necessarily those of the
editor or publisher.

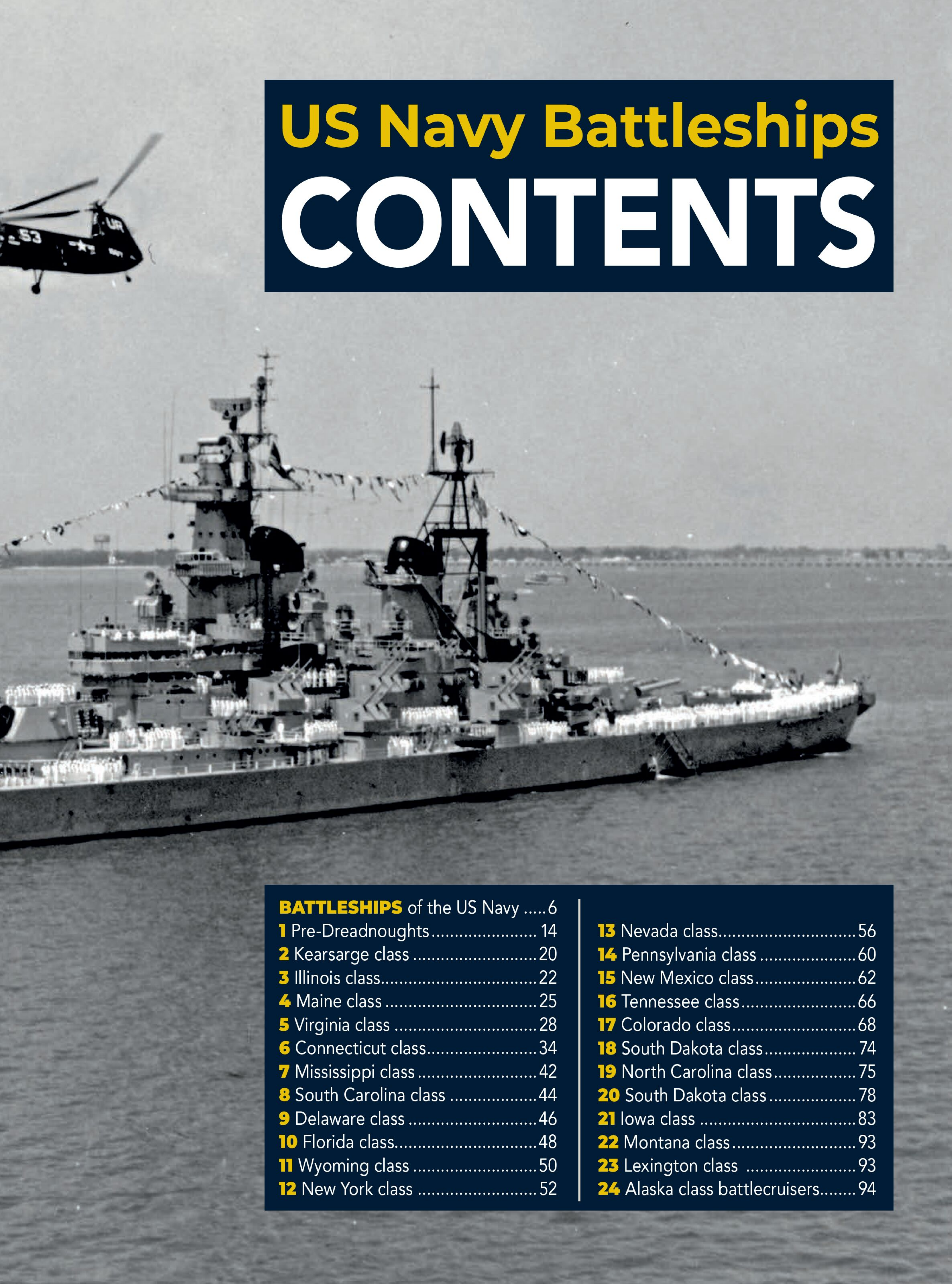
ISBN 978-1-917518-66-6



PREVIOUS PAGE (main image) USS Arizona (BB-39) in the East River, New York City, at the time of her trials, circa mid-1916.

THIS PAGE USS Iowa (BB-61) anchored in Hampton Roads, Virginia, with her crew paraded on deck as last minute details are completed for the International Naval Review on 12 June 1957.

THIS PAGE (inset) USS Missouri (BB-63) on trials in August 1944. Missouri was built at the Brooklyn Navy Yard and launched on 29 January 1944, commissioned on 11 June 1944, and served in World War II and the Korean War; she was decommissioned on 31 March 1992 and is now preserved as a museum ship at Pearl Harbor.



US Navy Battleships

CONTENTS

BATTLESHIPS of the US Navy6

1 Pre-Dreadnoughts	14
2 Kearsarge class	20
3 Illinois class.....	22
4 Maine class	25
5 Virginia class	28
6 Connecticut class.....	34
7 Mississippi class	42
8 South Carolina class	44
9 Delaware class	46
10 Florida class.....	48
11 Wyoming class	50
12 New York class	52

13 Nevada class.....	56
14 Pennsylvania class	60
15 New Mexico class.....	62
16 Tennessee class.....	66
17 Colorado class.....	68
18 South Dakota class.....	74
19 North Carolina class.....	75
20 South Dakota class	78
21 Iowa class	83
22 Montana class.....	93
23 Lexington class	93
24 Alaska class battlecruisers.....	94

BATTLESHIPS

OF THE UNITED STATES NAVY

USS Indiana (BB-1) in drydock
at the New York Navy Yard,
Brooklyn, NY, during 1898



The battleship was once the dominant warship type, and these impressive ships were one of the most powerful symbols of the rise of American sea power.

Early vessels such as USS Maine (ACR-1) and the Indiana class marked the nation's entry into the era of the battleship, culminating in the 'Great White Fleet' world cruise of 1907-09, showcasing America's naval ambitions.

The inter-war years produced some of the Navy's most iconic ships, including the fast and heavily armed North Carolina, South Dakota and Iowa classes.

During World War II US battleships played crucial roles, from enduring the shock of Pearl Harbor to providing shore bombardment and anti-aircraft defence. Yet the rise of naval aviation gradually overshadowed them.

After the war, only the Iowa class remained active, serving into the 1990s. Their retirement marked the end of the battleship era.

The 19th century witnessed a transformative era in naval architecture and warfare, with the emergence of the steam engine, ironclad vessels and the birth of the battleship, although the earliest designs bore little resemblance to the leviathans of World War I and II. In many ways the development of the American battleship mirrors that of the developing nation in the 19th and 20th centuries, as the country grew its maritime ambitions and its technological advancements.

The mid-19th century marked a shift from traditional wooden-hulled warships to ironclads. The conversion of existing wooden ships into ironclads, such as USS *Merrimack* being transformed into CSS *Virginia* during the American Civil War, demonstrated the potential of armoured vessels. This transition laid the foundation for the development of true battleships in the latter part of the century.

Early steam propulsion was crucial to the development of the American battleship. The integration of steam engines on warships gave the ships greater range and manoeuvrability than any sailing ship. USS *Princeton* (1843) is a notable example, featuring a steam engine alongside traditional sails. While not a battleship in the modern sense, *Princeton* foreshadowed the technological direction of all future American warships.

BIRTH OF IRONCLAD WARFARE

The American Civil War provided a testing ground for nascent battleship

technologies, with the most significant clash occurring between the ironclads USS *Monitor* and CSS *Virginia* in 1862. *Monitor*, with her revolving turret and innovative design, highlighted a departure from traditional ship design and laid the groundwork for the development of armoured warships.

In the post-Civil War era, the US Navy focused on refining and expanding its ironclad fleet. The monitors, such as the Passaic class, featured improvements in armour and armament. The development of rifled cannons and advances in metallurgy further enhanced the offensive capabilities of these early battleships.

The late 19th century saw the US continue to develop new designs, such

as USS *Texas* and USS *Maine*, which incorporated the latest technologies, including steel hulls, more powerful engines and sophisticated weaponry.

The development of American battleships in the 19th century was not only driven by technological innovation but also by strategic considerations. As the US expanded its influence globally, a powerful navy became essential to protect economic interests and secure maritime trade routes. Battleships represented a tangible projection of American power on the world stage. The first American warship termed a battleship was USS *Texas*, although she never received the 'BB' nomenclature of the pre-dreadnought ships that followed her.



USS Maine sank in Havana Harbour on 15 February 1898, contributing to the outbreak of the Spanish-American War.



On the night of 15 February 1898, the second-class battleship USS *Maine* (1890) was torn apart by a catastrophic explosion that killed 266 of her 354 crew. The loss of the ship became one of the most consequential events in American history, acting as the spark that ignited the Spanish–American War and setting the United States on a new path toward global influence.

Maine had been dispatched to Havana during a period of escalating tension between the US and the Spanish Empire, as Cuba’s long struggle for independence grew increasingly violent and politically charged. At 21.40 a sudden and devastating blast ripped through the forward section of the ship, hurling debris, flames and crewmen into the night sky. The dramatic destruction of *Maine* was immediately followed by an equally explosive political reaction. Public outrage across the US was fuelled by sensationalist newspaper headlines and deepening anti-Spanish sentiment. The rallying cry

“Remember the Maine! To hell with Spain!” swept the nation, pushing the US toward war with the European power.

Although many Americans believed at the time that Spain had deliberately mined the battleship, later investigations suggested that the most likely cause was an accidental coal bunker fire igniting nearby ammunition stores. In 1911 the remaining structure of *Maine* was raised from Havana Harbour; portions of the ship were brought to the US and interred at Arlington National Cemetery, where they remain a memorial to the men lost and to the event that helped to reshape America’s role in the world.

THE GREAT WHITE FLEET

In the early 20th century the US sought to assert its growing global influence and naval power. The embodiment of this ambition came in the form of the Great White Fleet, a monumental naval expedition that took place between 1907 and 1909. This historic journey not only

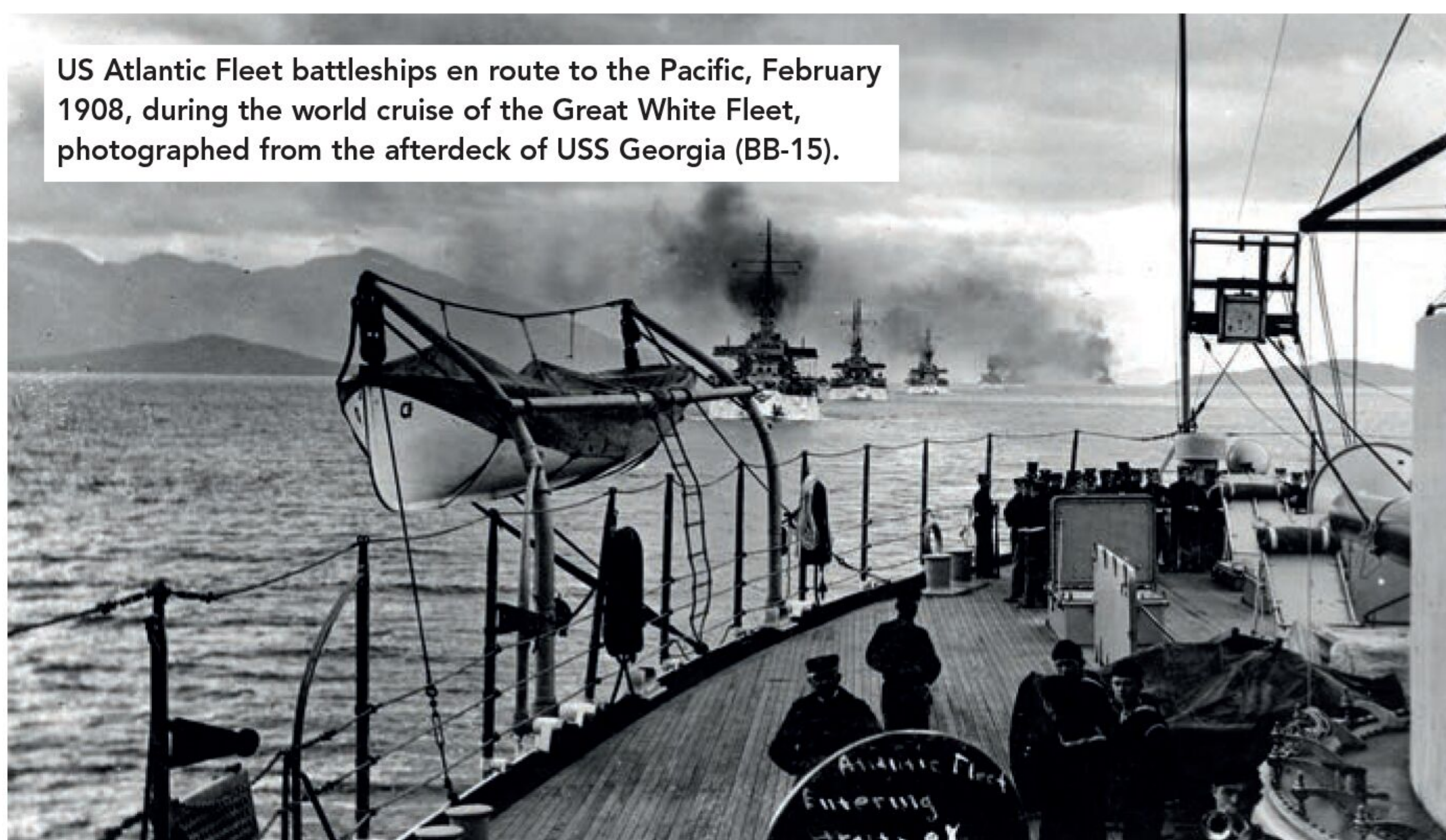
▲ Atlantic Fleet battleships steaming down Chesapeake Bay after visiting Annapolis, Maryland, circa 1913. USS *New Jersey* (BB-16) and USS *Georgia* (BB-15) are the two closest ships.

showcased the technological prowess of the US Navy but also marked a significant turning point in global perceptions of American strength and influence.

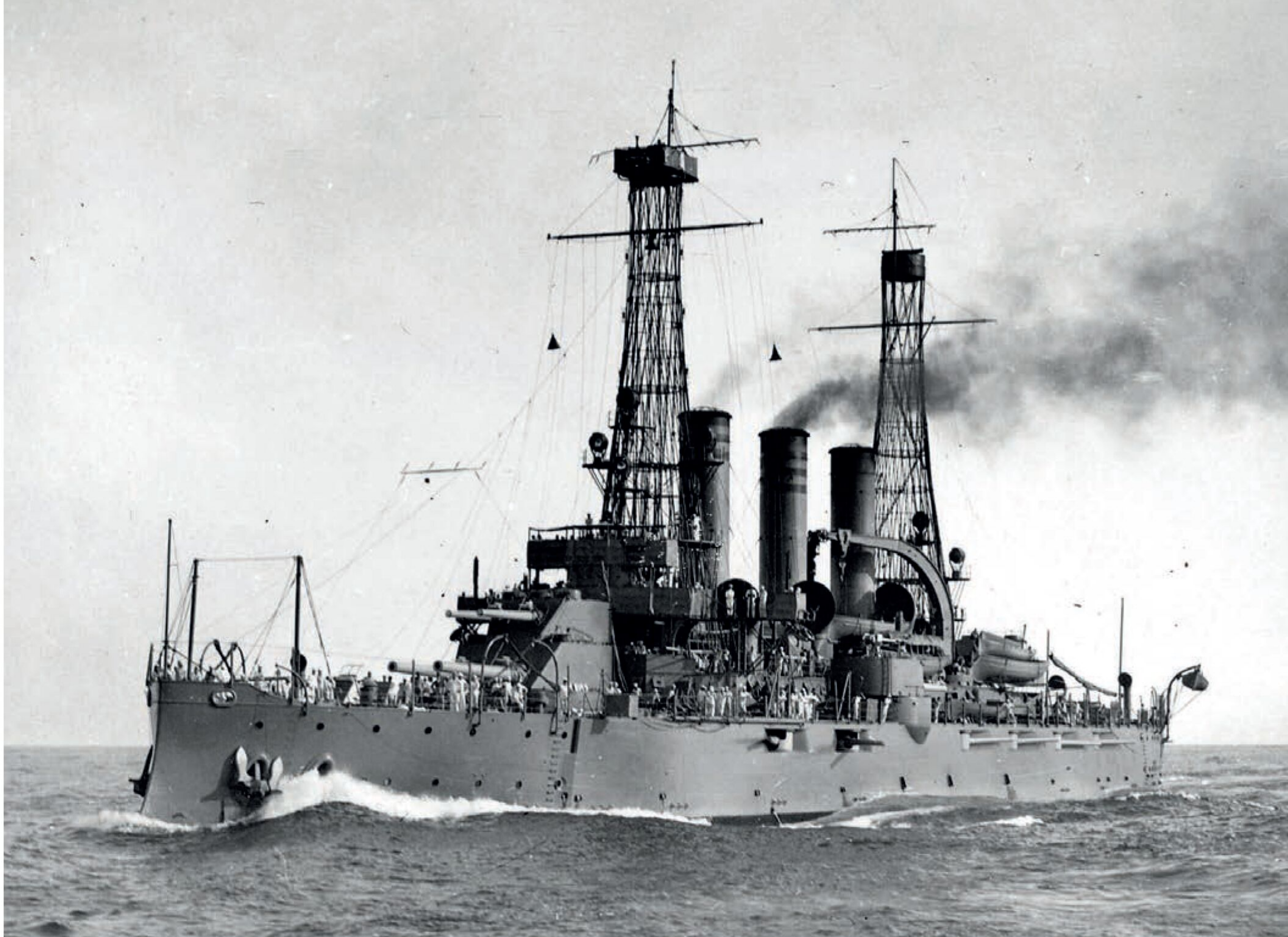
The idea of assembling a formidable fleet to highlight American naval strength originated during the presidency of President Theodore Roosevelt. The fleet, consisting primarily of battleships with hulls painted white, was intended to project power and goodwill on an international scale. It was Roosevelt’s intention to turn the US into a major naval power, capable of defending its interests and contributing to global stability.

The Great White Fleet comprised 16 battleships, divided into four squadrons. Each ship was painted white to symbolise purity and strength. The battleships were modern and formidable for their time, equipped with the latest technologies. Some of the more notable vessels included USS *Connecticut*, USS *Kansas*, USS *Vermont* and the flagship USS *Louisiana* under the command of Rear Admiral Robley D. Evans. Over the course of its journey, the Fleet visited numerous ports, chosen to maximise its impact.

The fleet departed Hampton Roads, Virginia on 16 December 1907 and made its first stop in Trinidad. From there, it crossed the Pacific, visiting ports in South America, New Zealand, Australia and the Philippines. The fleet then made its way to Japan, China and various other Asian ports before returning to the US in February 1909. During port visits, the American battleships became platforms for diplomatic engagement.



US Atlantic Fleet battleships en route to the Pacific, February 1908, during the world cruise of the Great White Fleet, photographed from the afterdeck of USS *Georgia* (BB-15).



Dignitaries, foreign leaders and royalty were all received on board, strengthening international relations and highlighting the United States's role as a diplomatic force. In Japan, for instance, the fleet's visit helped to improve bilateral relations and Emperor Meiji was welcomed aboard the ships. These interactions contributed to the image of the United States as a diplomatic and naval power with the ability to project its policies across the world and to forge alliances and maintain peace.

THE IMPACT OF DREADNOUGHT

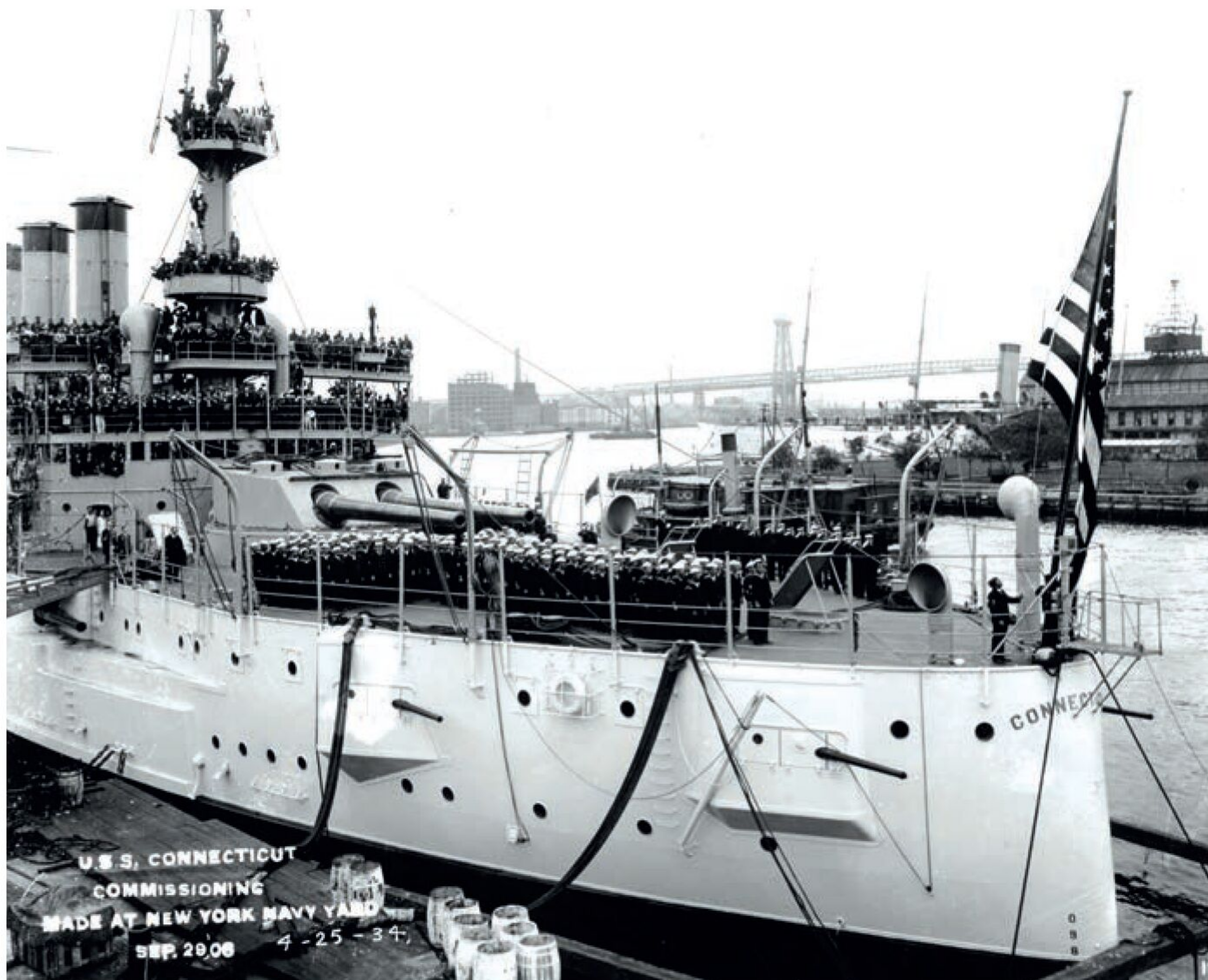
Battleship development was not restricted to the United States in the early years of the 20th century. In fact, naval warfare underwent a seismic shift with the launch of HMS *Dreadnought* by the Royal Navy in 1906. Her revolutionary design rendered all previous battleships obsolete as she featured an all big-gun armament and steam turbine propulsion. The impact on the US Navy was immediate and sent shockwaves throughout the American naval community. It also meant that the US had unwillingly been dragged into a new 'Dreadnought Race' to design and build ships that could challenge or better the new HMS *Dreadnought*.

The US Navy shifted its focus from a fleet of diverse types to a concentrated

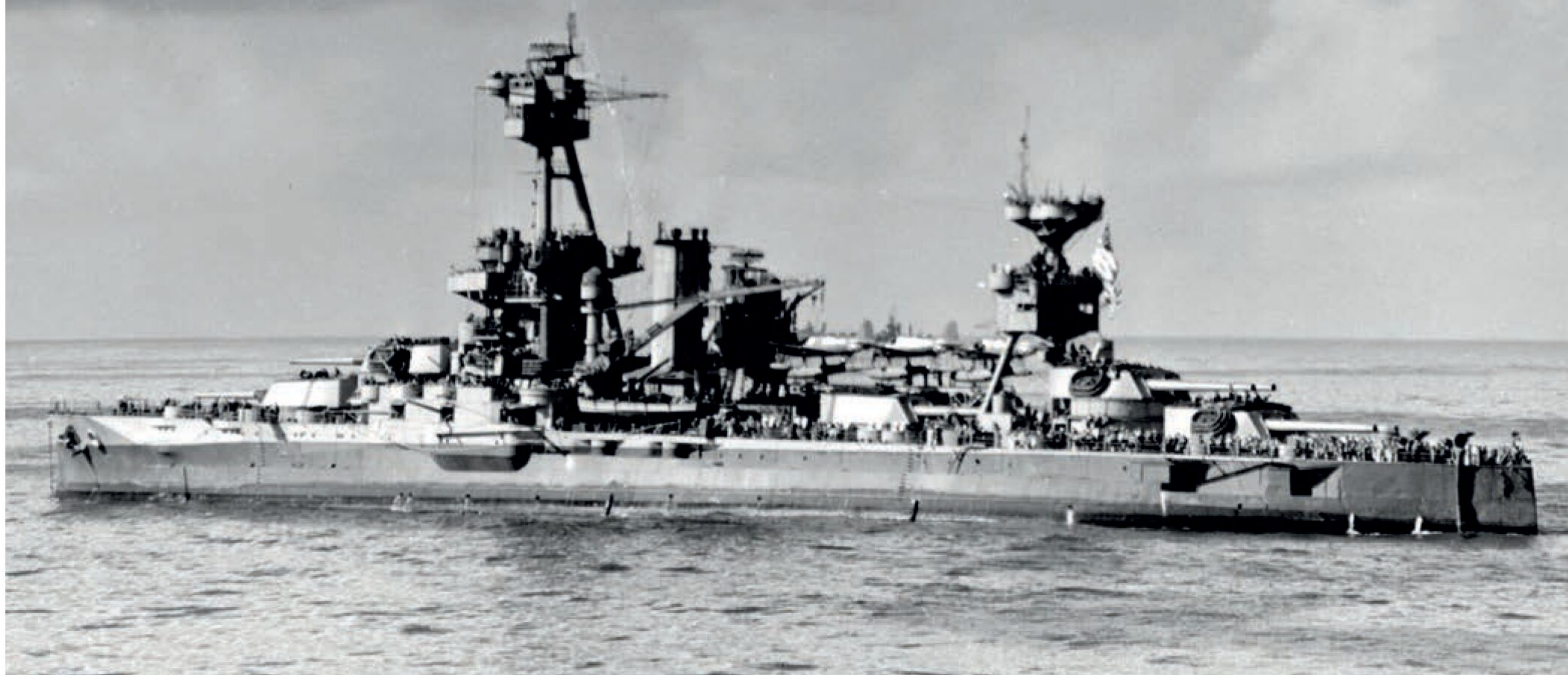
effort to build all-big-gun battleships like those being built for the Royal Navy. Notable examples of this included USS *South Carolina* and USS *Michigan*, the first American dreadnoughts, which were laid down in 1906 and commissioned in 1910. In so doing

▲ USS Virginia (BB-13), lead ship of a class of 14,948-ton battleships, pictured circa 1910-13.

▼ The National Ensign is raised during the commissioning ceremonies for the new battleship USS Connecticut (BB-18) at the New York Navy Yard, Brooklyn, New York, 29 September 1906.



USS New York (BB-34) off North Africa on 10 November 1942, just after the Battle of Casablanca. New York played a significant shore-bombardment and naval gunfire support role during the Battle as part of Operation Torch.



the US Navy aimed to maintain a fleet capable of engaging and outmatching any potential adversary.

WORLD WAR I

The 'Dreadnought Race' led directly to a naval arms race between the leading naval powers which culminated in the declaration of war in Europe in 1914. When the United States entered the war in April 1917, its battleships played a crucial role in the Allied effort, contributing to the maritime blockade against the Central Powers, protecting convoys and engaging in naval operations that impacted the course of the conflict.

Prior to 1917 the United States had maintained a policy of neutrality, but German U-boat attacks threatened American lives and commerce in the

North Atlantic. Since 1914, however, the US Navy had been steadily expanding its fleet of warships which was, upon entry into the war, allocated a variety of tasks, including escort and convoy duties, to protect the merchant ships carrying war supplies to the UK and France.

Once in theatre the battleships joined those of the Allies in blockading German North Sea ports. In 1918 the US Navy formed Battleship Division Nine, a specialised unit comprising six modern battleships including the sisterships USS *Texas* and USS *New York*. This division operated as a distinct entity within the British Grand Fleet.

TREATIES OF THE 1920s AND 30s

The aftermath of World War I saw a concerted effort among the major naval powers, the United States, the UK, Japan,

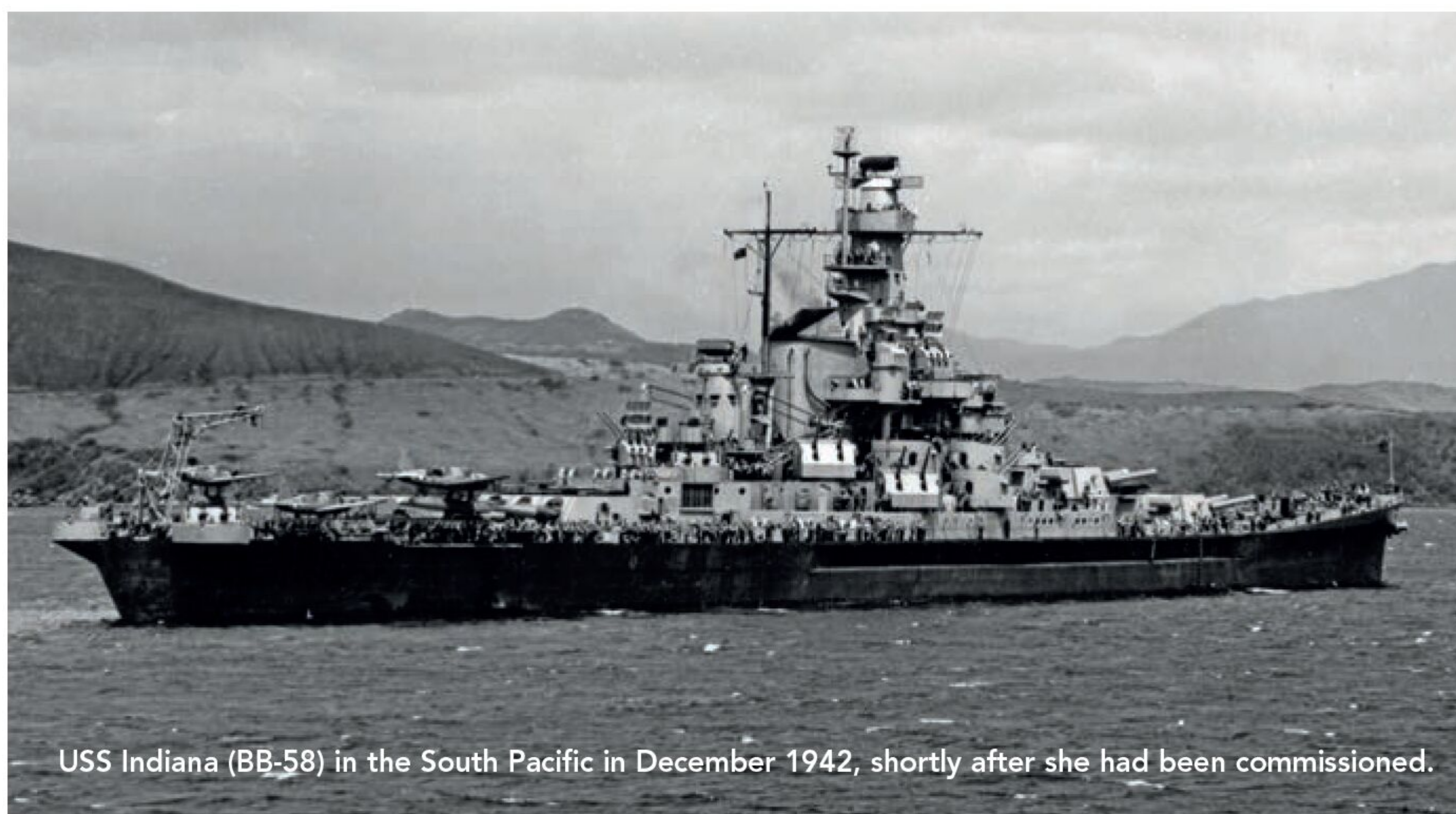
France and Italy, to curb another arms race, similar to that which had led to the outbreak of war in 1914. The Washington Naval Treaty of 1922 was the first attempt to curb the growth of building vast fleets of battleships and battlecruisers.

The treaty aimed to prevent an arms race by limiting the tonnage and armaments of capital ships. The London Naval Treaty of 1930 extended these limitations and further restricted naval construction. For the US Navy the Washington Naval Treaty was a traumatic affair and saw the cancellation of the Lexington class battlecruisers (although two, *Saratoga* and *Lexington*, were completed as aircraft carriers), the South Dakota class battleships, and the removal from service of several pre-dreadnought warships.

The treaties also focused the minds of innovators within the US Navy, and other navies, who went on to develop designs within the limitations of the treaties, optimising designs for improved speed, armour protection and firepower, while respecting the treaties' restrictions.

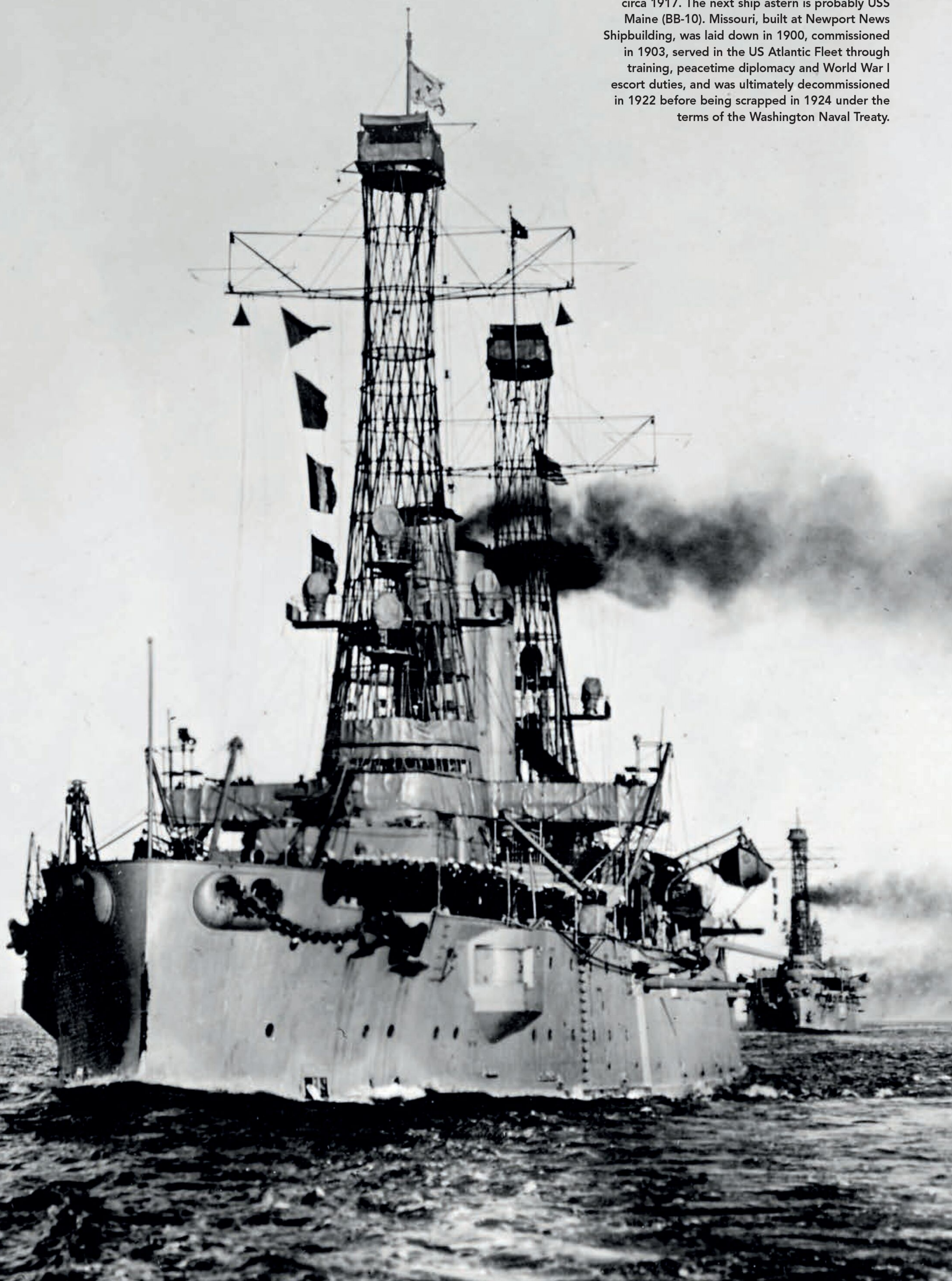
STANDARD AND FAST BATTLESHIPS

The US result of the treaty restrictions was the development of a ship which became known as the US Standard-type Battleship. The design characterised the all-big-gun warship and became the backbone of the US fleet. The term 'standard' not only referred to a specific battleship class, but also implied a level of standardisation in design. This allowed



USS Indiana (BB-58) in the South Pacific in December 1942, shortly after she had been commissioned.

USS Missouri (BB-11) in her role as a training ship, circa 1917. The next ship astern is probably USS Maine (BB-10). Missouri, built at Newport News Shipbuilding, was laid down in 1900, commissioned in 1903, served in the US Atlantic Fleet through training, peacetime diplomacy and World War I escort duties, and was ultimately decommissioned in 1922 before being scrapped in 1924 under the terms of the Washington Naval Treaty.



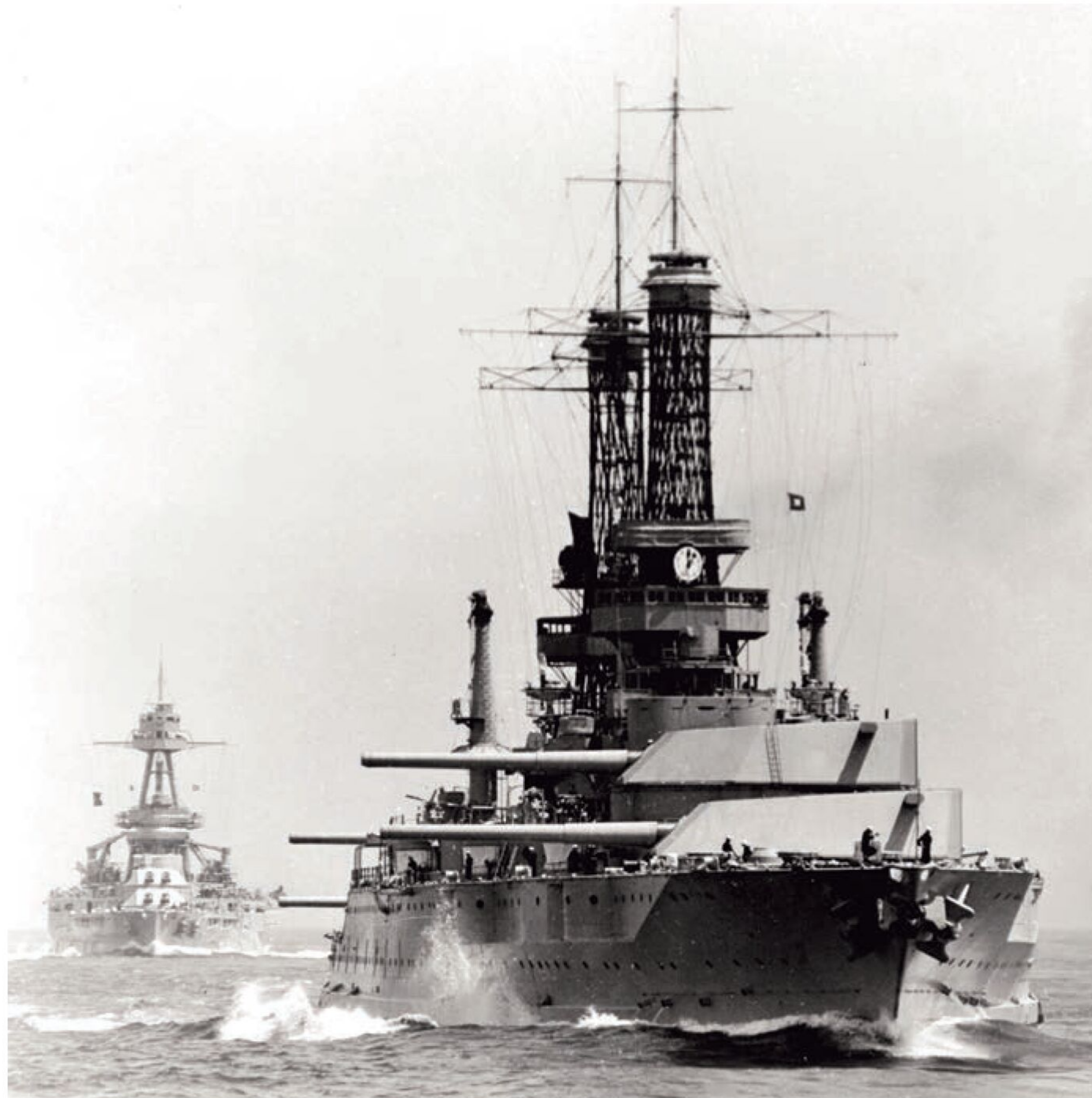
for mass production, ease of maintenance and interchangeability of parts, thus streamlining logistical support and repair efforts, something that came to the fore during World War II.

The concept of fast battleships emerged in response to the limitations of earlier designs, which sacrificed speed for the installation of heavy armour. The key characteristics of the fast battleships were speed and manoeuvrability, the retention of all big-gun configurations that were unencumbered by treaty limitations, as the outbreak of the war in 1939 effectively nullified all restrictions. With these characteristics in mind, American designers set about developing fast battleships that culminated in the superlative Iowa class, arguably the most sophisticated battleship design of all time, which had a top speed of over 30 knots.

The Iowa class became the apex of fast battleship design and plans to build six ships of the class were put in place, although two were never completed. Such was the success of the design that the Iowa class was involved in several major conflicts, starting with World War II, and later including the Korean War, the Vietnam War, the Cold War and the Gulf War, before the ships were retired to serve as museum ships across the US.

WORLD WAR II

The Japanese attack on Pearl Harbor on Sunday 7 December 1941 brought America into World War II and highlighted how ineffective battleships were against a coordinated and concerted attack by aircraft armed with bombs and torpedoes. USS *Oklahoma* and USS *California* were among the battleships severely damaged during the attack, while the former battleships USS *Utah*



▲ USS Idaho (BB-42) (foreground) and USS Texas (BB-35) during Battle Fleet practice off the Californian coast, circa 1930. Idaho's four triple 14/50 gun turrets are trained on the starboard beam.

and USS *Arizona* were destroyed. The United States had been caught napping in the Pacific, but afterwards the nation sought an almighty vengeance. Salvage operations saw some of the ships sunk at Pearl Harbor brought back into service, and these were modernised.

In the Pacific, battleships such as USS *South Dakota*, USS *Washington*

and USS *Indiana* played crucial roles in key naval engagements, such as the Battle of Guadalcanal, during which USS *Washington* conducted a long-range duel with the Japanese battleship *Kirishima*, which led to the latter's destruction.

Further battles at Leyte Gulf, Iwo Jima and Okinawa saw the battleships bombard enemy positions with considerable

Photographed from USS *Natoma Bay*, shortly after the conclusion of the Gilberts Campaign, are three battleships in an anchorage protected by anti-torpedo nets: left to right, USS Idaho (BB-42); USS *New Mexico* (BB-40); and USS *Mississippi* (BB-41).





USS Missouri (bottom) undertaking an underway replenishment with USS Kitty Hawk from the Military Sealift Command ship USNS Kawishiwi.



▲ Supreme Allied Commander General Douglas MacArthur signs the Japanese Instrument of Surrender aboard USS Missouri in Tokyo Bay.

accuracy in support of amphibious assaults. American battleships USS *Texas*, USS *Arkansas* and USS *Nevada*, and four British battleships, were involved in the D-Day landings, shelling German defence positions in Normandy.

The Iowa class battleship USS *Missouri* hosted the formal Japanese surrender in Tokyo Bay in 1945, marking the formal ending of World War II. But the time of the battleship had passed by then. After the war, the fleet of battleships swiftly dwindled, some saved as memorials and only the four completed members of the Iowa class being kept in reserve, saved by the US Marines who wanted them retained should their massive 16-inch guns be needed in a future war.

THE LAST BATTLESHIPS

Although not in frontline service, the four Iowa class battleships, USS *Iowa*, USS *New Jersey*, USS *Wisconsin* and USS *Missouri*, were kept in reserve. The election of President Ronald Reagan, however, saw

a massive expansion of American military spending in an effort to beat the Soviet Bloc by out-producing ships, planes and tanks. Part of these scheme was to build a 500-ship navy and one way to achieve this was to reactivate old ships in reserve, which included the four Iowa battleships.

The battleships were large vessels which could accommodate new weaponry and technology relatively easily. The decision was taken to equip each of the ships with new radar, fire control systems, Phalanx close-in-weapon systems, Tomahawk land attack cruise missiles, and Harpoon anti-ship missiles. The multi-million dollar programme also saw vast improvements in the habitability of the ships for crews brought up in the 1970s and 1980s rather than the austerity of the 1930s and 1940s.

Once back in commission, the Iowa class served with distinction in the Mediterranean in 1983 during the Lebanese Civil War, with USS *New Jersey* firing her 16-inch guns at positions ashore. It was, however, in the Gulf War of 1991 that was the last hurrah of the American battleship, when both USS *Wisconsin* and USS *Missouri* fired their guns against Iraqi invaders in Kuwait.

On 2 September 1991 it was, once again, *Missouri* that was chosen as the venue for the formal surrender of Iraq. On her completion, the last remaining US battleship USS *Missouri* decommissioned, and after some time in reserve became, alongside all three of her sisters, museum ships, which tell the story of American battleships to future generations.



▲ USS North Carolina off New York in June 1946. The ship was laid down in 1937 and completed in April 1941, while the United States was still neutral during World War II.

1 PRE-DREADNOUGHTS

USS TEXAS

BUILDER Norfolk Naval Shipyard

DISPLACEMENT 6,417 tons full load.

ARMAMENT 2 x 12-inch (305mm), 4 x 6-inch (152mm), 2 single 6-inch (152mm), and 12 single QF 6pdr 2.2-inch (57mm) guns

COMPLETED 15 August 1895

FATE 15 February 1911: renamed San Marcos, sunk as target on 22 March 1911

In 1892 the US Navy was still to adopt the BB numbering system for its battleships, when USS Texas, built by Norfolk Naval Shipyard, was the first American warship to be designated as a battleship, but not given a pennant number. Her design was in response to the proliferation of armoured cruisers being built in central and southern America.

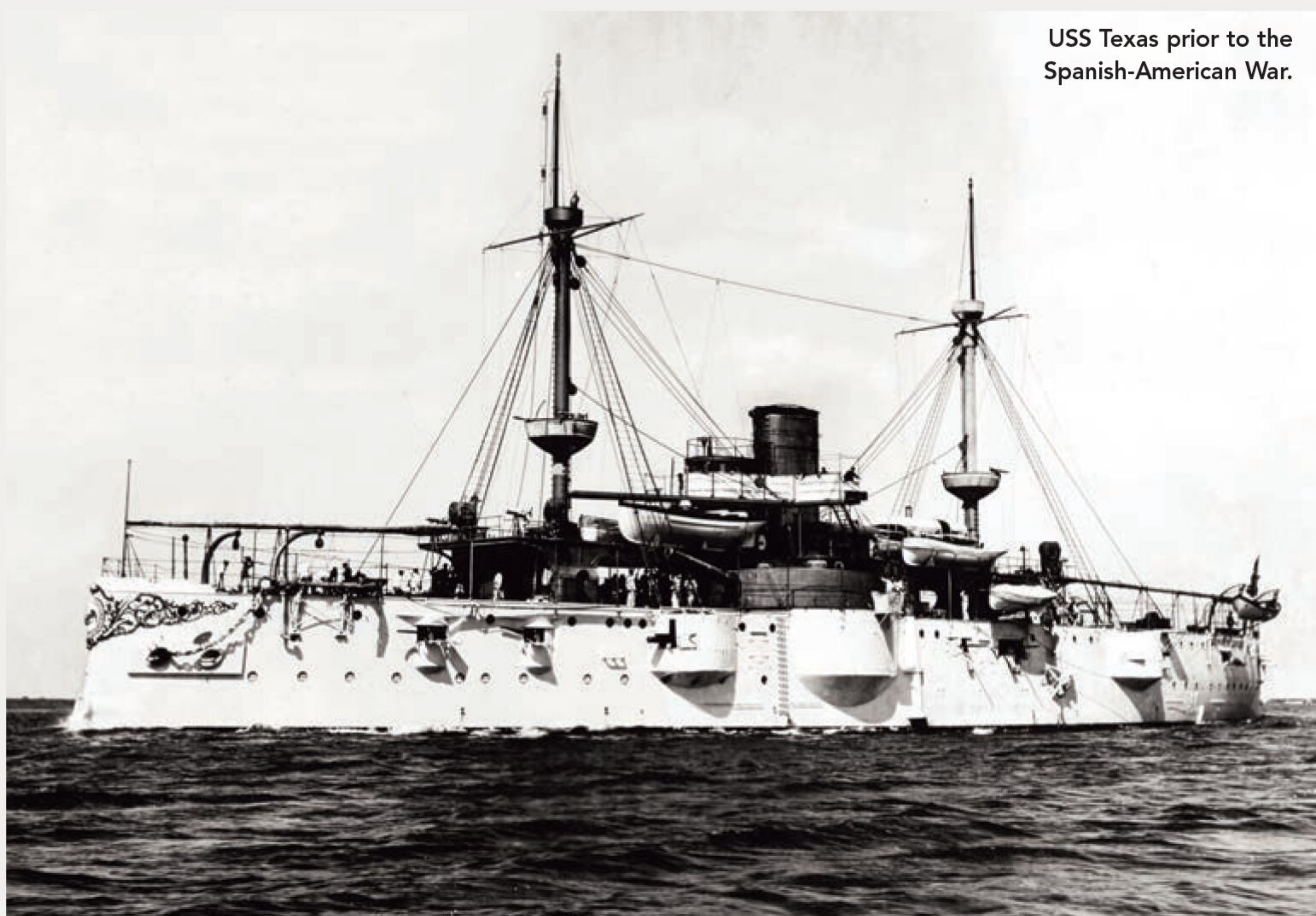
After three years of work at the shipyard, the new vessel was ready, and she was commissioned on 15 August 1895. She gained a reputation for being an unlucky ship, grounding once and actually flooding while she was in dry dock in New York, an incident in

which several men lost their lives.

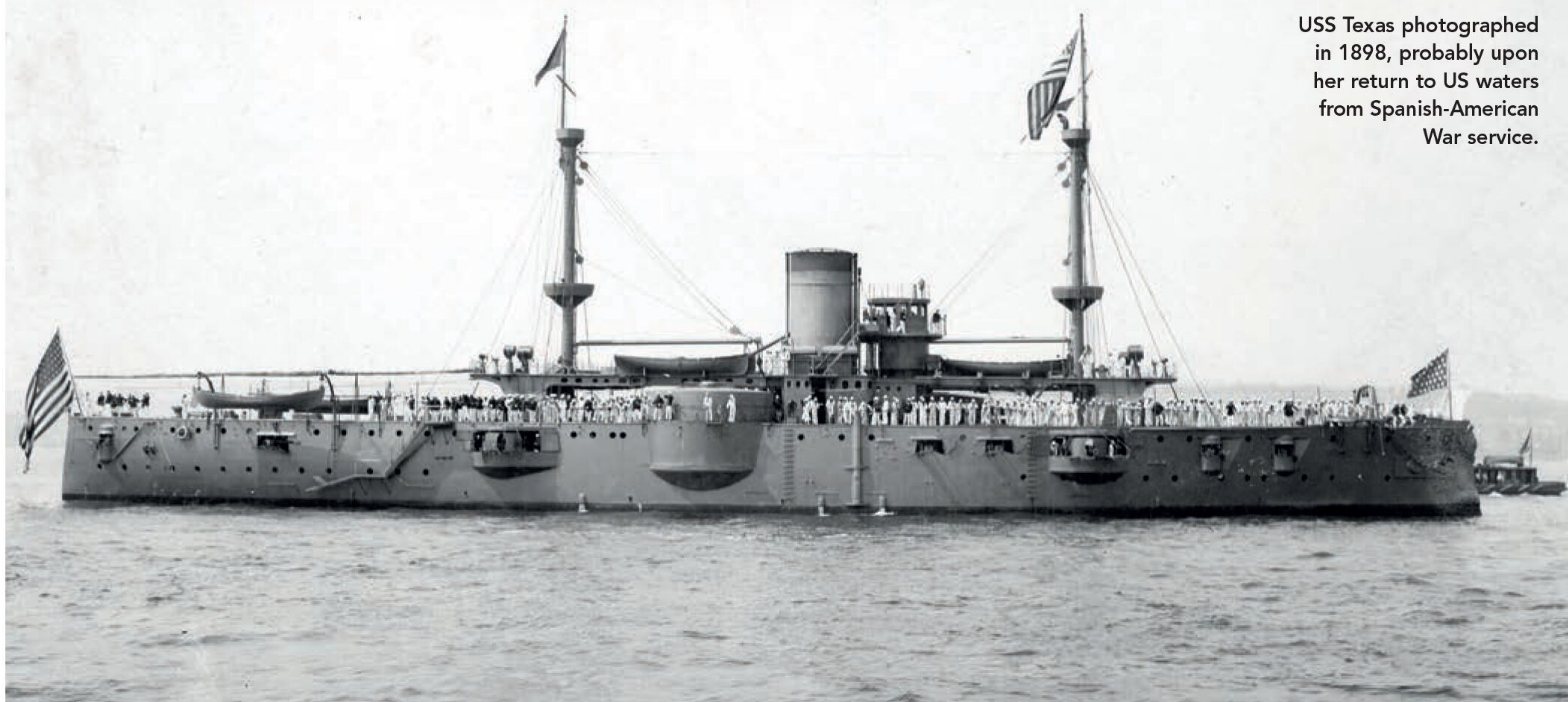
During her brief career her technology was superseded by rapid developments in Europe with the development of HMS Dreadnought, steam turbine propulsion and modern armaments and armour plating.

USS Texas spent most of her time operating along the eastern seaboard of the United States, but did participate in operations off Cuba and at the Battle of Santiago. This proved to be the highlight of her naval career and, following the

delivery of newer, more capable battleships, she was relegated to the role of flagship of the Coastal Squadron before finally being renamed San Marcos. She was deliberately sunk on 21-22 March 1911 as a gunnery target in Chesapeake Bay.



USS Texas prior to the Spanish-American War.



USS Texas photographed in 1898, probably upon her return to US waters from Spanish-American War service.

USS INDIANA (BB-1)

BUILDER William Cramp & Sons

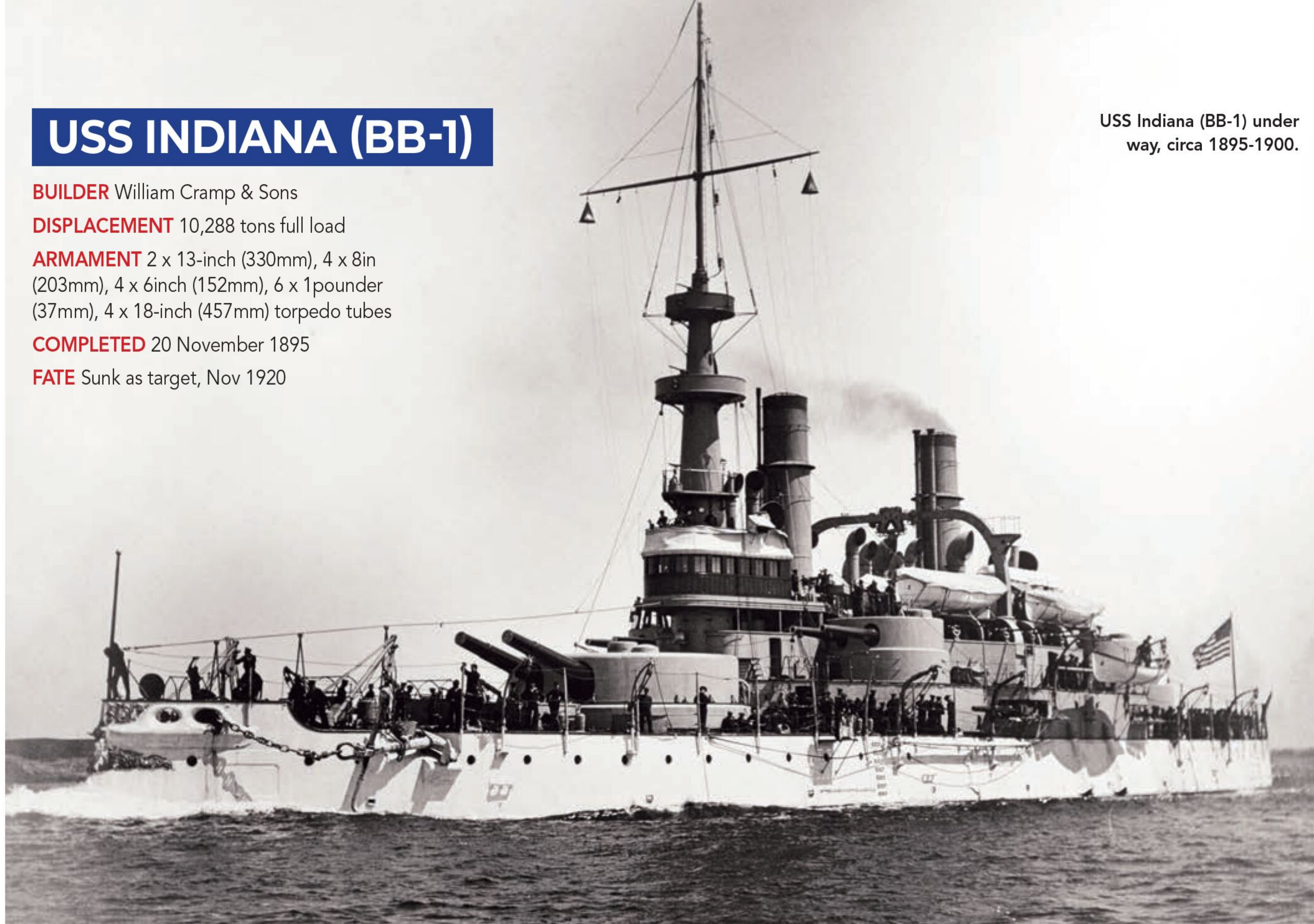
DISPLACEMENT 10,288 tons full load

ARMAMENT 2 x 13-inch (330mm), 4 x 8in (203mm), 4 x 6inch (152mm), 6 x 1pounder (37mm), 4 x 18-inch (457mm) torpedo tubes

COMPLETED 20 November 1895

FATE Sunk as target, Nov 1920

USS Indiana (BB-1) under way, circa 1895-1900.



USS Indiana (BB-1) was ordered from William Cramp and Sons in Philadelphia and, like her two sisters, had a displacement of 10,288 long tons, making her a large and powerful warship of the period. She was designed with four 13-inch main guns, eight secondary 8-inch/35 guns and six 6-inch casement guns, 26 pounder guns and six one pounder guns, plus six torpedo tubes.

She was given extensive armour, particularly over the vital areas where, in places including the turrets and machinery spaces, the plating was 17 inches in thickness. Accommodation was provided on board for a ship's complement of between 586 and 636 officers and men. Construction of the battleship commenced on 7 May 1891 and continued until 28 February 1893, when she was launched.

During her sea trials it was discovered that USS Indiana had been delivered overweight by the shipyard, resulting in a low freeboard, and she also lacked the required manoeuvrability.

During the Spanish-American War of 1898 Indiana played an

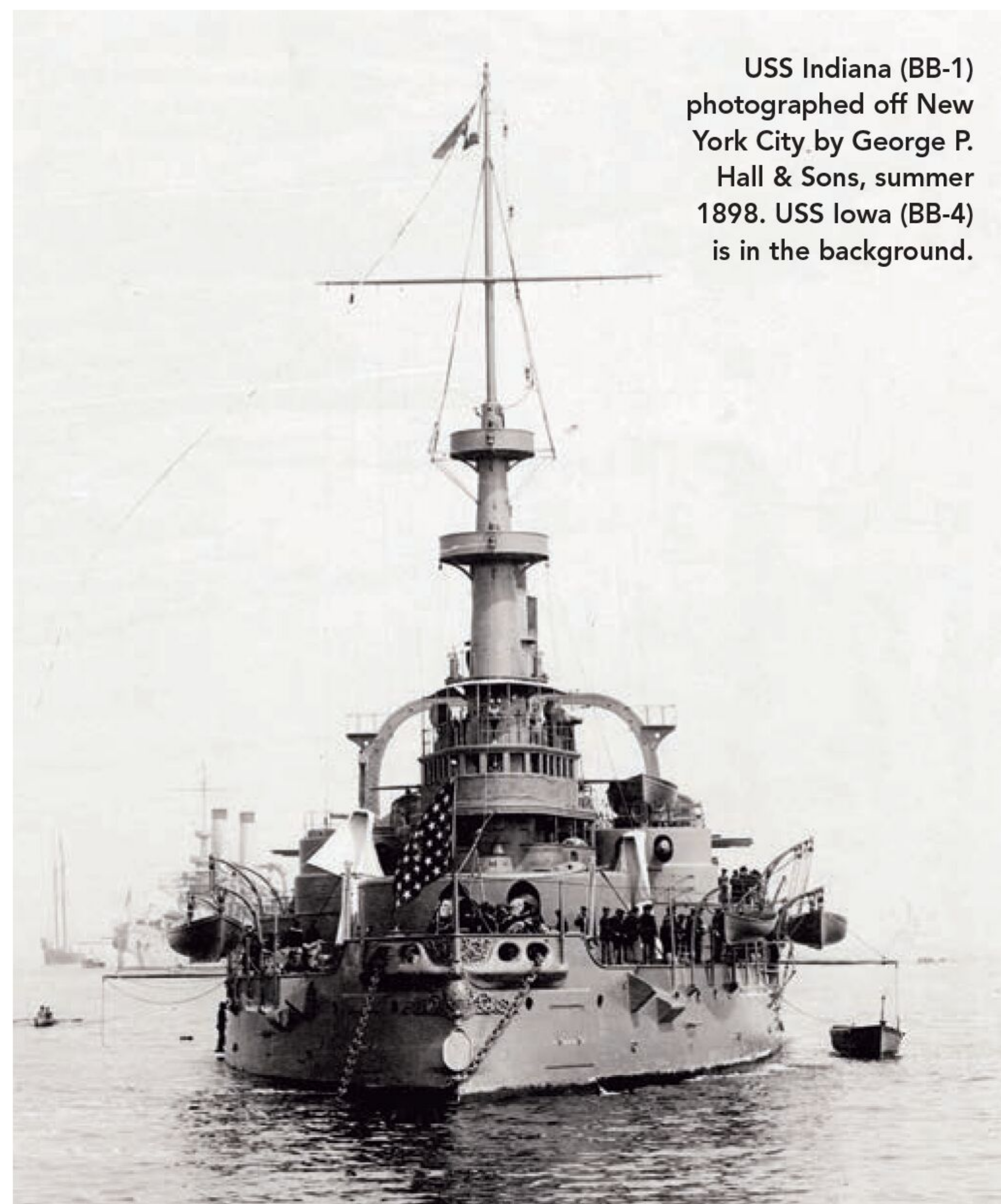
important role in the blockade of Santiago de Cuba and the ensuing Battle of Santiago de Cuba, when her guns were partially responsible for the destruction of two Spanish destroyers, *Plutón* and *Furor*. Her lack of speed, however, prevented her from chasing the fast Spanish cruisers.

She was, however, the first step in the development of dreadnoughts within the US Navy and was, when handed over to the US Navy, on parity with many similar designs emerging in Europe. Battleship development in the United States in the early 1900s was, however, extremely swift and the development of each new class hastened the obsolescence of the USS Indiana and her sisters.

Indiana was soon relegated to support roles and use as a coastal battery ship and in a training role before being decommissioned in 1919. Finally, she was used as a target vessel. Famed aviator Billy Mitchell had suggested that battleships were in danger of being sunk by aircraft and he arranged for a demonstration with a planned aerial attack.

Over the course of a few hours, a number of aircraft dropped bombs on the empty hulk with varying degrees of accuracy. Those that found

their target took their toll and Indiana sank in shallow water in Chesapeake Bay on 20 September 1920, from where the remains were salvaged.



USS Indiana (BB-1) photographed off New York City by George P. Hall & Sons, summer 1898. USS Iowa (BB-4) is in the background.

USS MASSACHUSETTS (BB-2)

BUILDER William Cramp & Sons

DISPLACEMENT 10,288 tons
full load

ARMAMENT 2 x 13-inch (330mm),
4 x 8in (203mm), 4 x 6inch (152mm),
6 x 1 pounder (37mm), 4 x 18-inch
(457mm) torpedo tubes

COMPLETED 10 June 1896

FATE Scuttled 6 January 1921

The second member of the Indiana class, USS Massachusetts, garnered the nickname of 'Big Mamie' among her crews. She, like her two sisterships, represented a significant leap in technology from the coastal battleships that had preceded her. She would go on to play a crucial role during America's fight with the Spanish Empire during the war of 1898.

USS Massachusetts was built by William Cramp and Sons of Philadelphia, with the first steel in her keel being laid down on 25 June 1891. She was launched on 10 June 1893, an event witnessed by 15,000 people. She was finally commissioned into service on 10 June 1896. Her design was quite innovative: she had a top speed of 16.5 knots which meant she was capable of keeping pace with any other warship of her time.

However, the design was extremely flawed. One example was that if all her armament



USS Massachusetts off New York City, during the victory review, August 1898.

were turned towards one target, the weight of the guns (544,000lbs) caused the ship to list, rendering the guns virtually useless and putting the upper deck under water.

Soon after being commissioned Massachusetts served as the flagship of the North Atlantic Squadron, commanded by Admiral William T. Sampson, and was involved in the American victory at the Battle of Santiago de Cuba which effectively ended any Spanish resistance in the Caribbean. During her time in the Caribbean, however, Massachusetts was severely damaged when one of her turrets exploded, killing nine

men, and she also went aground on two occasions.

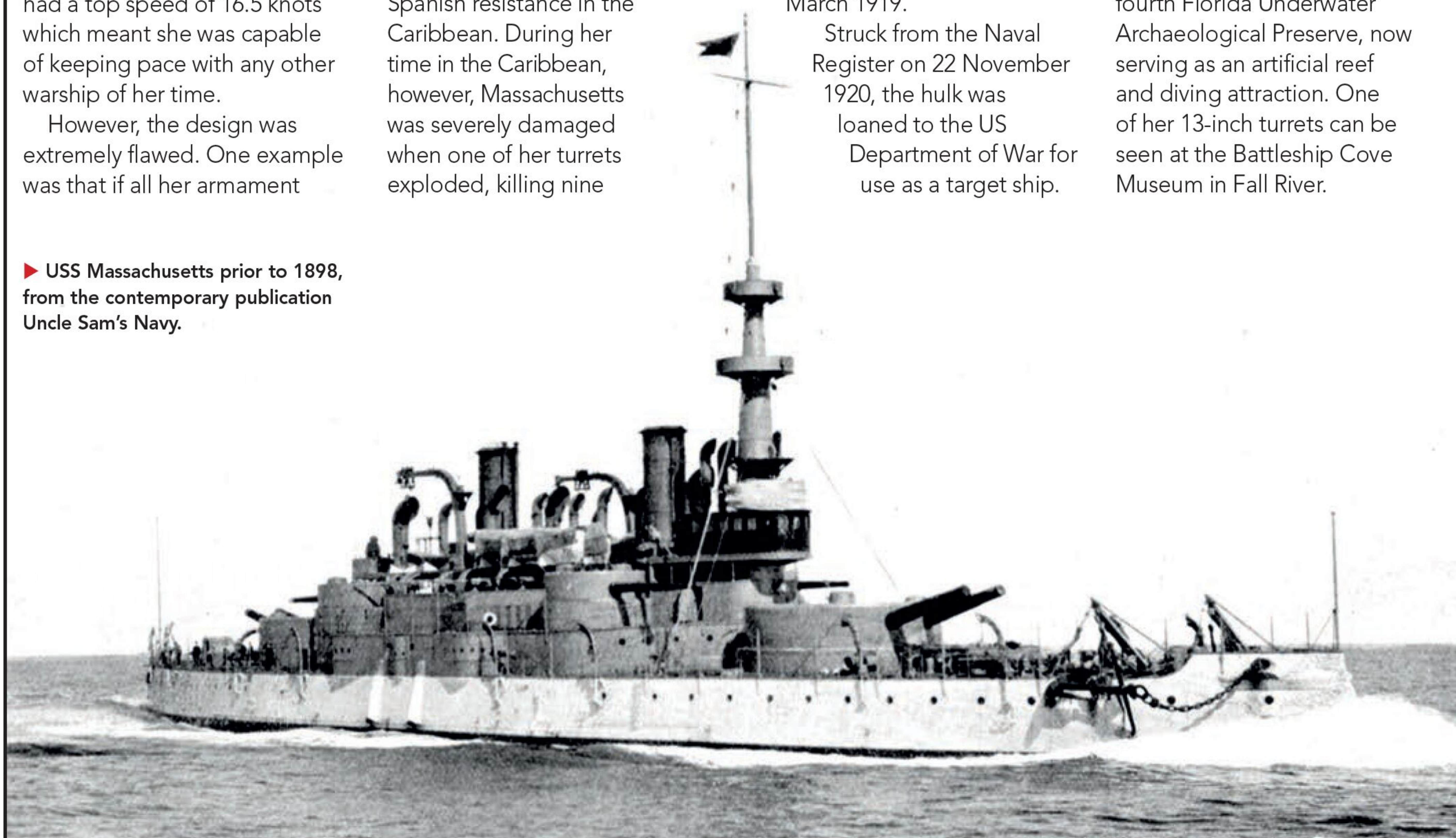
In 1910 she became a practice ship for the US Naval Academy, and made two midshipmen cruises to Europe. During World War I, the old battleship supported gunnery training efforts off the east coast. She was, however, quickly outclassed by a raft of new innovations in the early 1900s and was relegated to secondary roles and reclassified as Coast Battleship #2 before being decommissioned in March 1919.

Struck from the Naval Register on 22 November 1920, the hulk was loaned to the US Department of War for use as a target ship.

The hulk was to be used during trials of new and innovative artillery shells. These proved effective in sinking the vessel in shallow waters in the Gulf of Mexico near Pensacola on 6 January 1921. The wreck was handed back to the US Navy which offered it for scrap, but no offers were received, and she slowly faded from memory.

In June 1993, however, the wreck was declared the property of the State of Florida and became the fourth Florida Underwater Archaeological Preserve, now serving as an artificial reef and diving attraction. One of her 13-inch turrets can be seen at the Battleship Cove Museum in Fall River.

► USS Massachusetts prior to 1898, from the contemporary publication Uncle Sam's Navy.



USS Oregon returning to the US from Cuba following the Spanish-American War, 1898.

USS OREGON (BB-3)

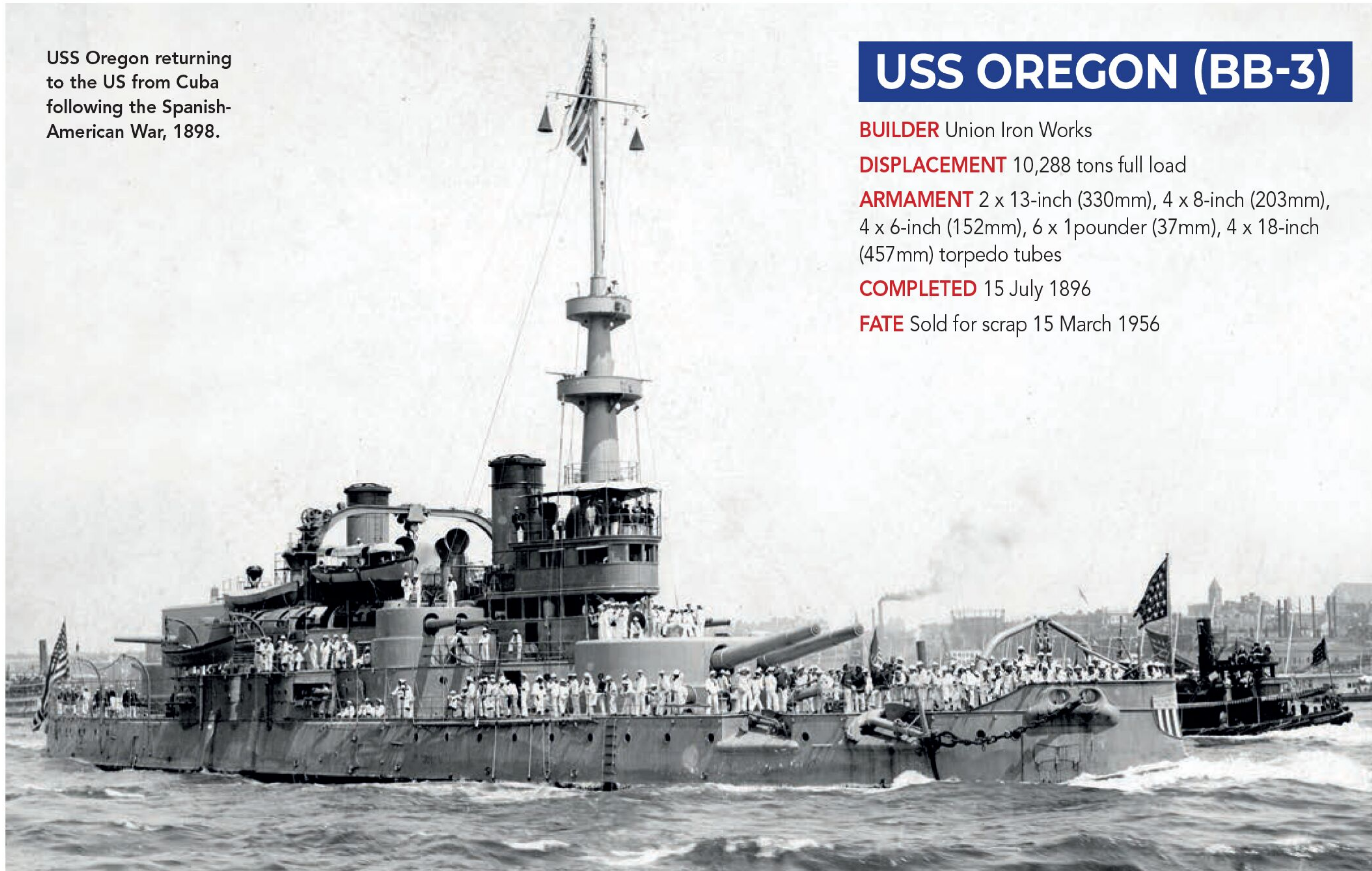
BUILDER Union Iron Works

DISPLACEMENT 10,288 tons full load

ARMAMENT 2 x 13-inch (330mm), 4 x 8-inch (203mm), 4 x 6-inch (152mm), 6 x 1-pounder (37mm), 4 x 18-inch (457mm) torpedo tubes

COMPLETED 15 July 1896

FATE Sold for scrap 15 March 1956



USS Oregon holds a significant position in the annals of the US Navy. She was one of the first battleships of the modern era whose construction started in 1891, making her one of the earliest ships built under the terms of the Naval Act of 1890, which was designed to ratify and strengthen the maritime defences of the United States with a naval force.

She was built by Union Iron Works in San Francisco and had steel armour plating, a 10,000-ton displacement and a powerful steam propulsion system, similar to that of her sisters. In this guise she was commissioned into the US Navy on 15 July 1896.

Just two years later during the Spanish-American War of 1898, USS Oregon received orders to traverse from the West Coast to the East Coast, a journey which took her to the tip of South America and back, to join the US Atlantic Fleet. This 14,000-mile journey became something of a legend in US Navy annals, and was known as the 'Voyage of the Oregon'. Once in the Caribbean, the battleship played a crucial

role during the Battle of Santiago de Cuba on 3 July 1898, when she engaged Spanish ships and, together with other American units, decimated the Spanish fleet.

After this conflict, the battleship went through several modernisations throughout the rest of her career, but in 1909 she was reclassified as a

coastal battleship and given the new designation ACR-3. During World War I she served as a training vessel and was decommissioned in 1919.

In 1925, because of her historical importance, she was once again given her old pennant number, BB-3, in honour of her contribution to

American naval history and soon thereafter became a museum ship at Portland in Oregon.

Too old and obsolete for service during World War II, she instead served another purpose. Due to metal shortages in 1942 the museum ship was declared as scrap metal and was duly broken up for the war effort.



USS Raleigh (C-8)
USS Oregon (BB-3) and USS Saint Louis (C-20) at the Puget Sound Navy Yard, Bremerton, Washington, circa 1913.

USS IOWA (BB-4)

BUILDER William Cramp

DISPLACEMENT 12,850 tons
full load

ARMAMENT 4 x 12-inch (305mm),
8 x 8-inch (203mm), 6 x 4-inch (100mm),
20 x 6 pounders, 4 x 1 pounder, 4 x
M1895 Colt Machine guns, 2 x 14-
inch (356mm) torpedo tubes

COMPLETED 16 June 1897

FATE Sunk as target ship,
23 March 1923

USS Iowa (BB-4) is a unique entry in the history of American battleships as the only representative of her class. Iowa had a displacement of 11,346 long tons and four 12-inch guns as her main armament, backed up by armour plating that was 14 inches thick in places. A pair of vertical triple-expansion steam engines was powered by four steam boilers. She was built by William Cramp and Son's Shipyard and was laid down on 5 August 1893. Her construction was slow, and she did not reach the launching stage until 28 March 1896. She was commissioned on 16 June 1897.

USS Iowa played a major role in the American blockade of western Cuba initiated by President William McKinley, through Proclamation 411, which was issued on 22 April 1898 and which lasted until 1 May. The blockade was challenged by the Spanish Empire, who dispatched a fleet of powerful cruisers to

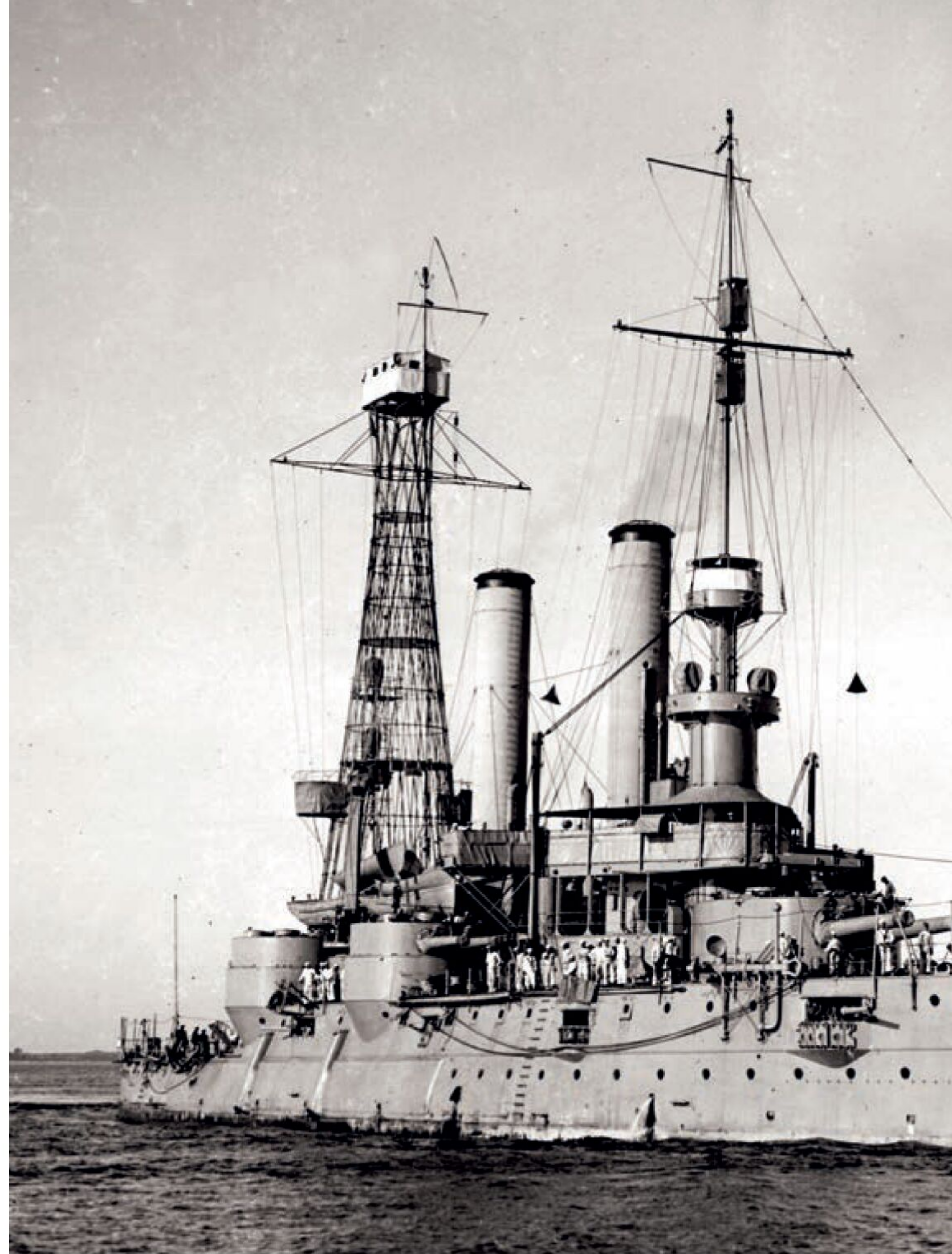
attempt to smash it under the command of Rear Admiral Pascual Cervera y Topete.

The Americans, meanwhile, had the battleships New York, Iowa and Indiana plus the cruiser Detroit at their disposal, with another five ships en route. On 12 May Iowa led the American line of battle as the US bombarded the harbour at Puerto Rico. Iowa was struck by a single Spanish shell, which resulted in three men being hurt.

The American naval force then headed out to sea in search of the Spanish fleet, but initially missed them until 29 May 1898. when they were sighted outside of Santiago de Cuba. On 31 May battle commenced, with the Spanish ships being outclassed and outgunned during the brief Battle of Santiago de Cuba.

USS Iowa was in a fierce gun battle with the Spanish cruiser Infanta Maria Theresa at just 2,500 yards. Following a fire and significant damage, the Spanish ship was run aground, with her crew fearing a possible ammunition explosion onboard. The Spanish cruiser Vizcaya was similarly run aground, as was Cristóbal Colón, while Furor had been destroyed by Iowa's accurate and deadly gunfire. Two days later the Spanish garrison at Santiago de Cuba surrendered to American forces.

In October 1898 USS Iowa



transferred to the Pacific, where she resumed her peacetime operations. On 8 September 1901 she collided with the sailing ship Mary Flint while the battleship was at anchor in San Francisco Bay, and the smaller vessel eventually sank.

In 1902 Iowa was flagship of the South Atlantic Squadron, showing the flag in South

America. In 1904 she returned to the North Atlantic Squadron following a major refit and sailed for a tour of Europe. Between 1905 and 1908 she remained on the east coast of the United States and the Caribbean.

She spent two years out of commission from 1908 to 1910. When she was recommissioned on 2 May it was as a training ship which saw her crewed by trainee midshipmen from the Annapolis Naval Academy for a tour of European ports. On her return home she was again briefly placed in reserve before resuming her training role.

On 3 May 1911 USS Iowa assisted in the rescue of passengers and crew from the stricken Ward liner Merida, which had collided with the steamship Admiral Farragut off Cape Charles in Virginia. She continued her training role until what was thought to be the end of her career on 23 May 1914, when she was decommissioned into reserve status.

Three years later, however, the ship was placed in limited commission upon the entry of

USS Iowa steaming in New York Harbour, escorted by tugs, yachts and other craft, during the Spanish-American War Victory Fleet Review, 21 August 1898.





▲ USS Iowa (BB-4) under way circa 1918 towards the end of her World War I service.

▼ USS Iowa (BB-4) photographed circa 1912, with the image retouched and tinted for a postal card. She was significantly more seaworthy than her predecessors.



▲ USS Iowa manoeuvring under fire by battleship guns, while in use as a radio-controlled target during Fleet gunnery practice off Panama, in March 1923. Projectiles can be seen hitting the water on either side of the target. The ship was sunk as a result of damage received in this exercise.

the United States into World War I, and she functioned as a receiving ship for naval recruits. In this capacity she was moved to Hampton Roads from Philadelphia where she had spent the years since decommissioning.

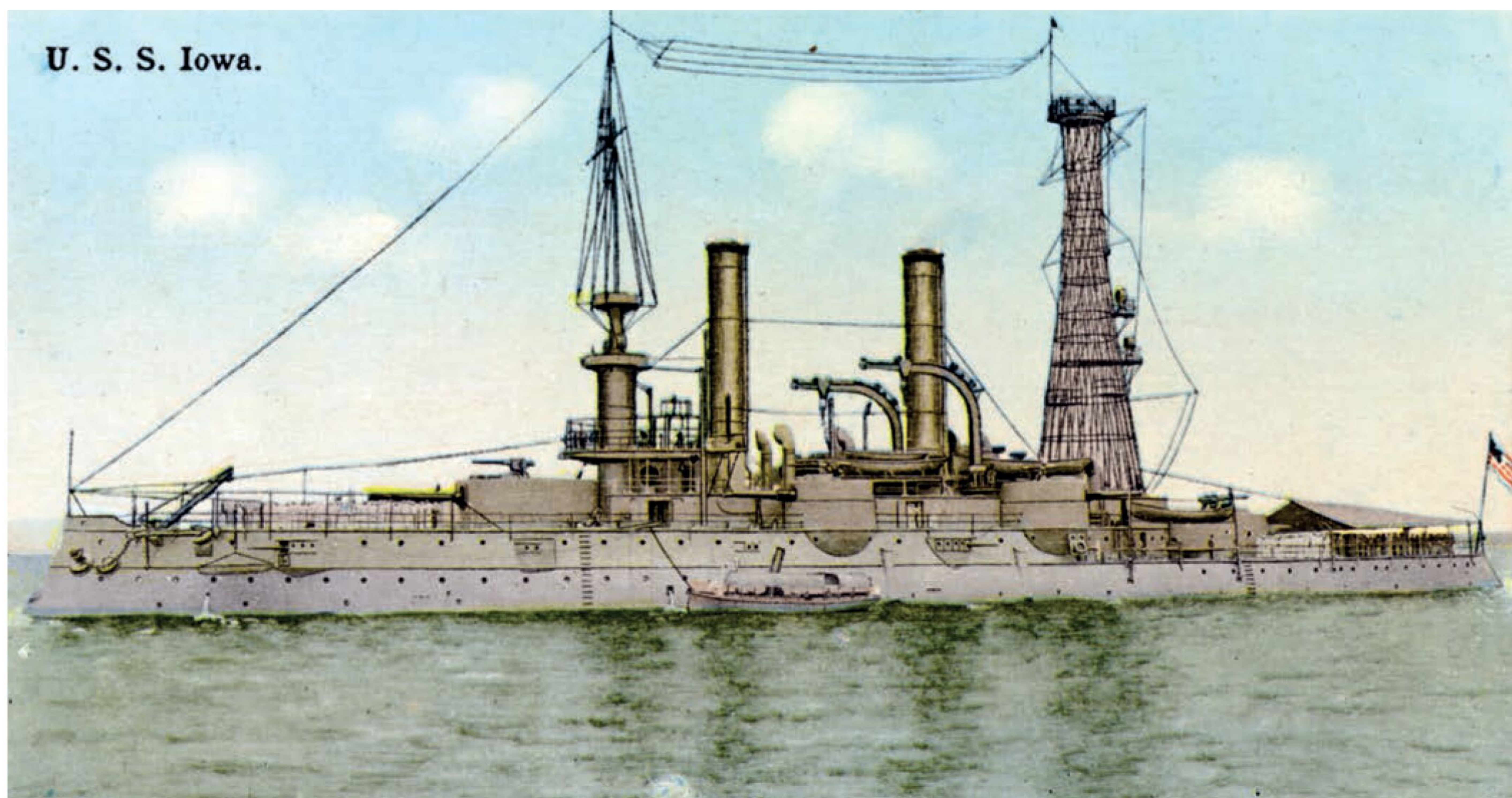
She was renamed as Coast Battleship #4 on 30 April 1919 to free up the name Iowa for one of the new South Dakota class battleships, but this ship was never completed. In 1919 the former Iowa was converted into a radio controlled target ship at

Philadelphia as part of a project to evaluate the effectiveness of internal compartmentalisation to withstand the effects of flooding following aerial bomb damage.

During the initial tests held in June 1921 Coastal Battleship #4 was controlled by officers stationed onboard the battleship USS Ohio and was hit by two dummy bombs from US Army Air Corps aircraft. Following these trials, she was laid up at Philadelphia and reclassified as IX-6 on 21 July. She next went to sea in April 1922, again serving

as a target vessel for exercises with her new control ship USS Shawmut. IX-6 was then taken via the Panama Canal to the Pacific for shooting practice by the battleship USS Mississippi as part of Fleet Problem 1 in February 1923.

During a second shoot on 23 March 1923, IX-6 was struck by three 14-inch shells from USS Mississippi, which sank the old vessel. Fittingly as the former USS Iowa sank, her successor, USS Maryland, fired a 21-gun salute in her honour.



2 KEARSARGE CLASS

The Kearsarge class battleships occupy a distinctive place in US naval history due to their unusual two-storey gun-turret configuration, a design never repeated in later classes. Authorised on 2 March 1895, the class consisted of only two ships, both contracted to the Newport

News Shipbuilding Co. At full load, each vessel displaced approximately 11,730 tons and was powered by a pair of vertical triple-expansion steam engines. Steam was produced from five coal-fired boilers, enabling a top speed of roughly 16.8 knots. Although modest in size compared

with later battleships, the Kearsarge class demonstrated innovative thinking during a transitional era in naval architecture. Their unique turret layout was intended to maximise firepower within a limited displacement, though it ultimately proved impractical for future designs.

USS KEARSARGE (BB-5)

BUILDER Newport News Shipbuilding and Drydock Co

DISPLACEMENT 13,060 tons full load

ARMAMENT 4 x 13-inch (330mm), 4 x 8-inch (203mm), 14 x 5-inch (127mm), 20 x 6-pounders, 8 x 1 pounder, 4 x 18-inch (457mm) torpedo tubes

COMPLETED 20 February 1900

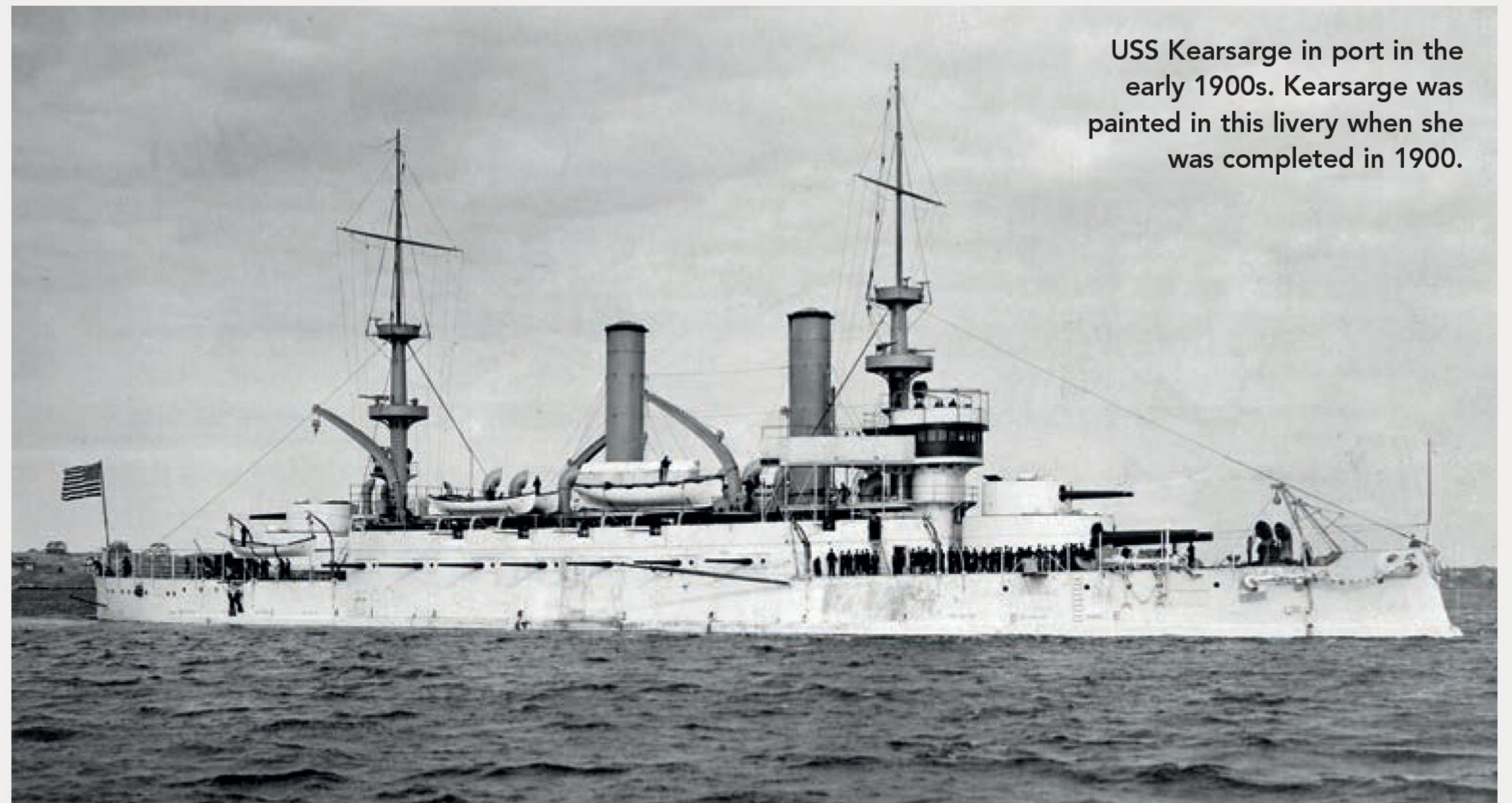
FATE Sold for scrap 9 August 1955

USS Kearsarge (BB-5) is unique in the history of the US Navy as the only battleship not to be named after a US State of the Union. Kearsarge was named in honour of the previous ship of the name, which served with distinction during the American Civil War.

Kearsarge was ordered from Newport News Shipbuilding and Drydock Co with the first steel plates being laid down on 30 June 1896, together with the keel of her sistership USS Kentucky. Work on the two ships progressed steadily and they were launched on the same day, 24 March 1898. After final fitting-out, the ship was commissioned on 20 February 1900.

Armed with four 13-inch guns in a unique two-storey arrangement, each Kearsarge battleship measured 375ft 4in by 72ft 3in. Power came from a pair of three-cylinder vertical triple expansion steam engines and five Scotch boilers, giving a top speed of 16.81 knots. The double stacked turrets were a unique feature, with large 13-inch 35-calibre guns at the bottom and 8-inch 40-calibre guns housed in smaller turret above.

The main armament was supplemented by 14 5-inch/40-calibre guns, 20 six-pounders,



USS Kearsarge in port in the early 1900s. Kearsarge was painted in this livery when she was completed in 1900.

eight one-pounder guns, four machine guns and four torpedo tubes. In service USS Kearsarge and Kentucky proved to be very wet ships due to their low freeboard, rendering the use of most of their armament impractical in heavy seas. They were designed primarily for use in coastal defence operations.

This did not, however, preclude them from cruising abroad. During Kearsarge's first commission in 1903 she served as flagship of the European Squadron, visiting Kiel where she hosted Emperor Wilhelm II of Germany. On a visit to the UK the Prince of Wales, later King George V, came aboard. On 13 April 1906, when she was back in US waters, an explosion of gunpowder in her 13-inch forward turret killed ten men.

In 1907 Kearsarge was part of the 'Great White Fleet', a worldwide deployment of American battleships. Two years later she was decommissioned ahead of a two-year modernisation programme.

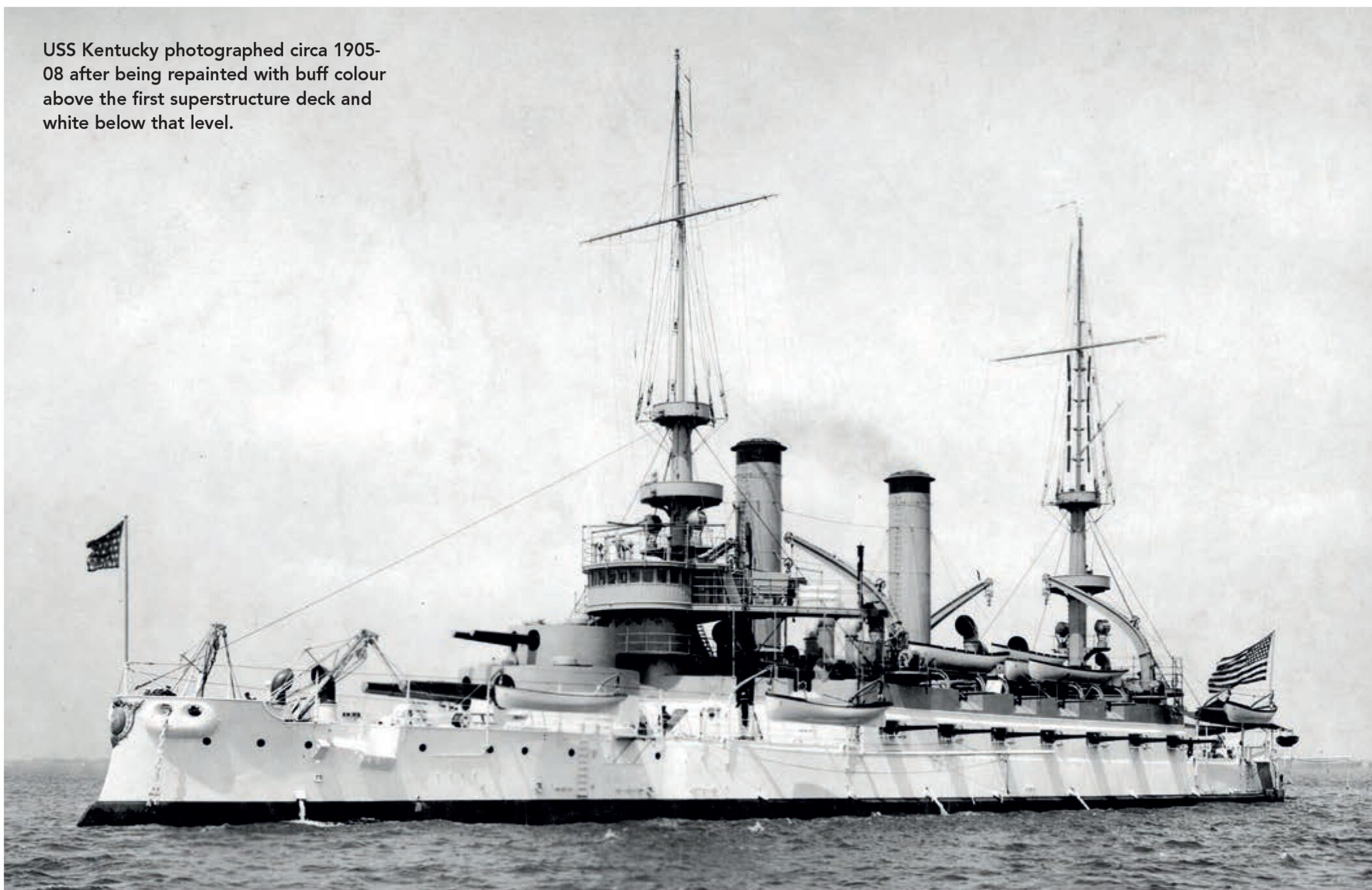
She resumed routine missions until 1916, when she was downgraded to serve as a training ship until 1919. In 1920 she was converted into a crane

ship and named Crane Ship #1. In this relatively minor role, she continued to serve the US Navy until as late as 1955 when she was eventually sold for scrap.



USS Kearsarge in drydock during her trials period, 18 September 1899.

USS Kentucky photographed circa 1905-08 after being repainted with buff colour above the first superstructure deck and white below that level.



USS KENTUCKY (BB-6)

BUILDER Newport News Shipbuilding and Drydock Co

DISPLACEMENT 13,060 tons full load

ARMAMENT 4 x 13-inch (330mm), 4 x 8-inch (203mm), 14 x 5-inch (127mm), 20 x 6-pounders, 8 x 1 pounder, 4 x 18-inch (457mm) torpedo tubes

COMPLETED 15 May 1900

FATE Sold for scrap 24 March 1923

USS Kentucky was a pre-dreadnought battleship and the second ship of the Kearsarge class, which had principally been designed for coastal defence work. The battleship featured a distinctive two-storey turret arrangement and was armed with four 13-inch and four eight-inch guns.

The warship was built by Newport News Shipbuilding and Drydock Co, with her keel being laid down on 30 June 1896. She was launched on 24 March 1898. It took another two years of fitting-out before the ship was delivered to the US

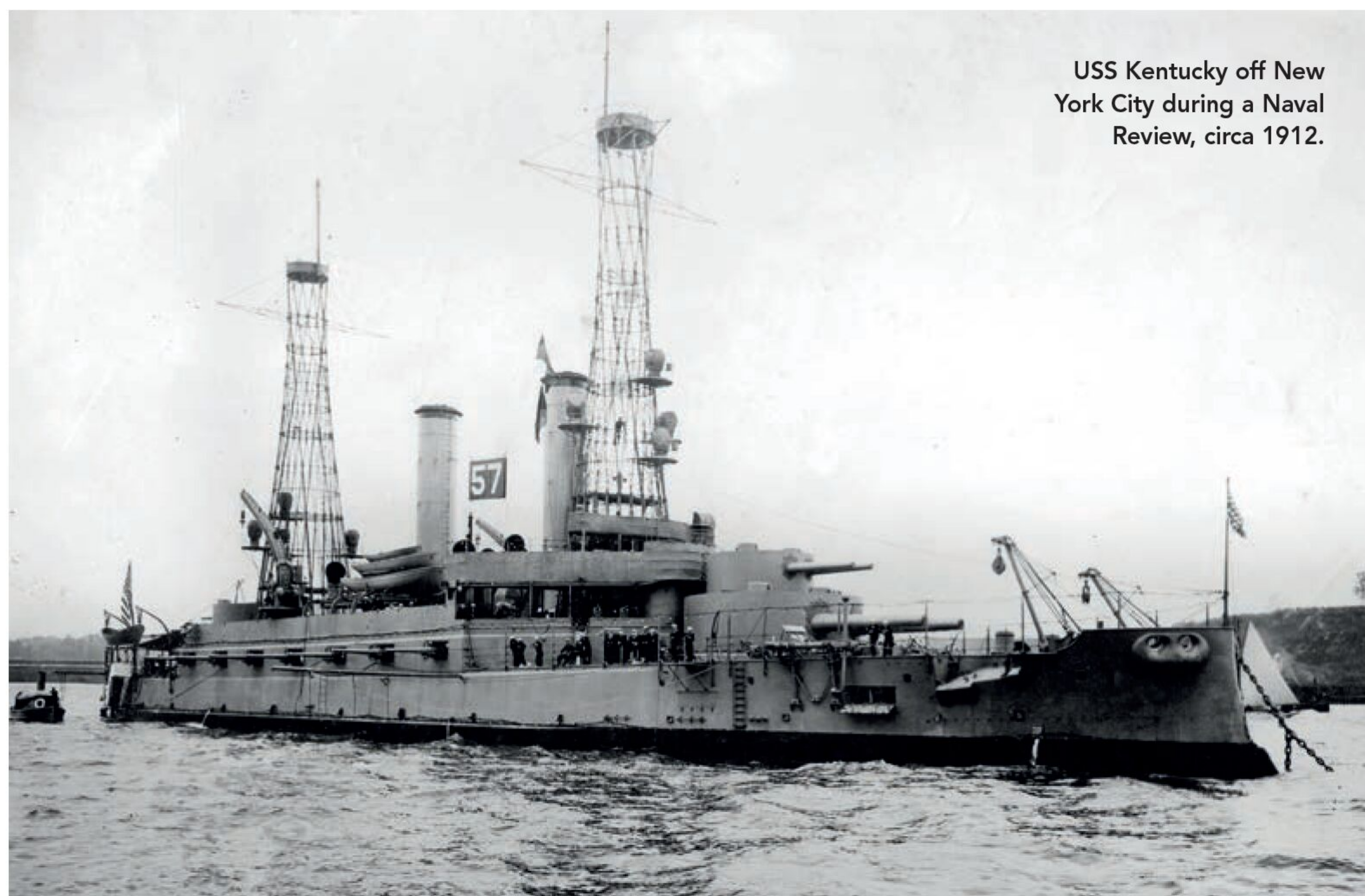
Navy. She was commissioned into service on 15 May 1900 under the command of Captain Colby Mitchell Chester.

Her 20 years of service were undertaken without any direct combat involvement. From 1901

to 1904 she served in East Asia, visiting ports in Japan and China. She was present during the infamous Boxer Rebellion. In 1907 she joined the Great White Fleet for a world tour to showcase the naval power of the United States.

From 1909 she underwent a two-year modernisation programme before participating

in the American intervention in the Mexican Revolution from 1915 to 1916. She was downgraded to a training ship in 1917, a role she undertook for the next three years before she was decommissioned according to rules laid down by the Washington Naval Treaty and was sold for breaking up in 1923.



USS Kentucky off New York City during a Naval Review, circa 1912.

3 ILLINOIS CLASS

The Illinois class ships were a development of the previous Indiana and Kearsarge classes and had an overall length of 374ft and a beam of 70ft 3in. Each ship had a draught of 23ft 6in and displaced approximately 12,250 long tons fully loaded. Two triple expansion engines generating 16,000hp gave the ships a

maximum speed of 16 knots.

The three ships ordered, USS *Illinois*, USS *Alabama* and USS *Wisconsin*, were powerfully armed for the period, with a main battery consisting of four 13-inch/35 calibre guns in twin gun turrets fore and aft. This was backed up by a secondary armament of 14 6-inch/40

calibre guns, six 1-pounder guns, and four 18-inch submerged torpedo tubes. As first designed the Illinois class had accommodation for a ship's complement of 536 officers and enlisted men, but throughout the three ships' careers this steadily grew, until between 692 and 713 men were allocated to each battleship.

USS ILLINOIS (BB-7)

BUILDER Newport News Shipbuilding

DISPLACEMENT 12,450 tons full load

ARMAMENT 4 x 13-inch (330mm), 14 x 6-inch (152mm), 16 x 6 pounder, 6 x 1 pounder, 4 x 18-inch (457mm) torpedo tubes

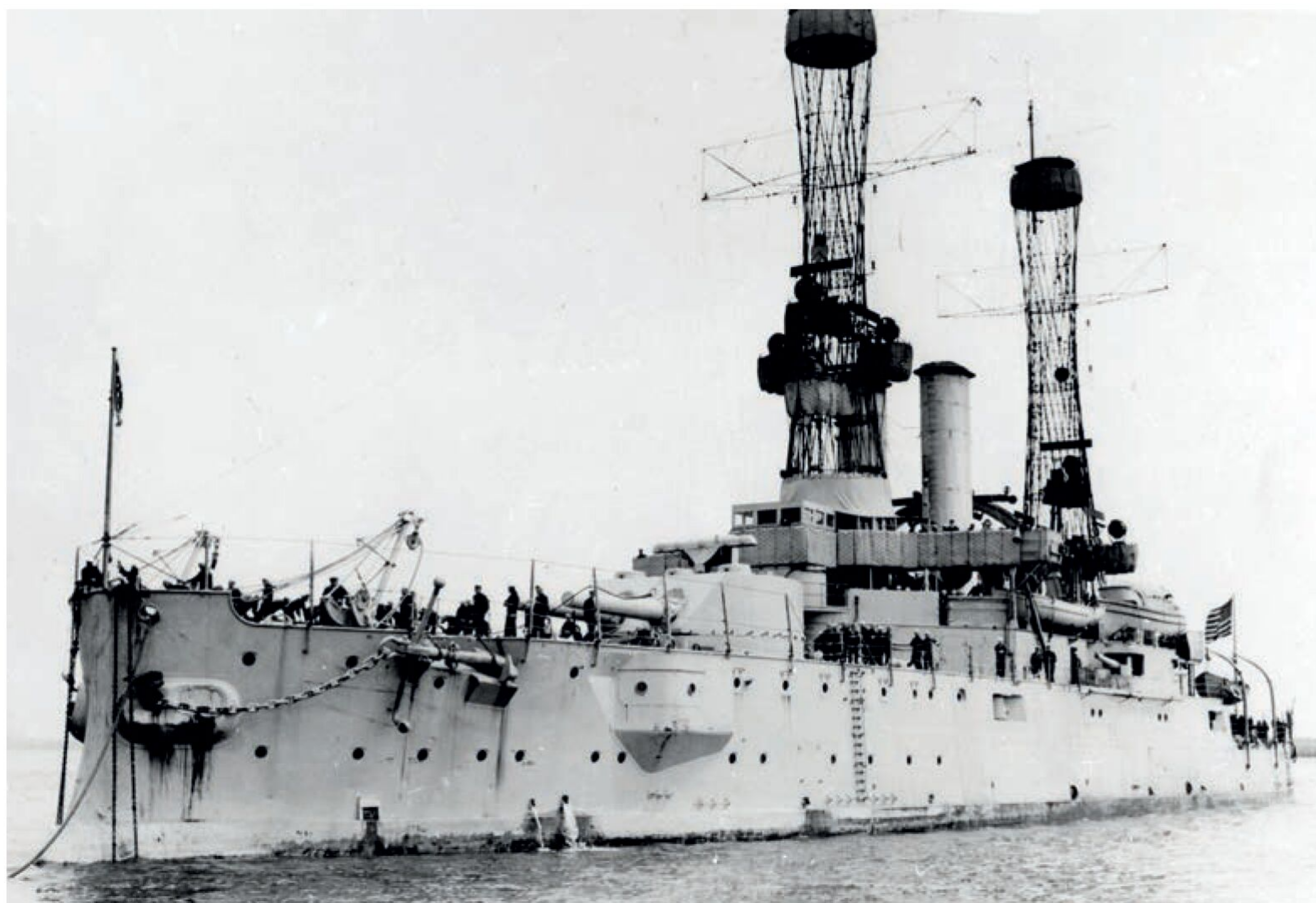
COMPLETED 16 September 1901

FATE Sold for scrap 18 May 1956

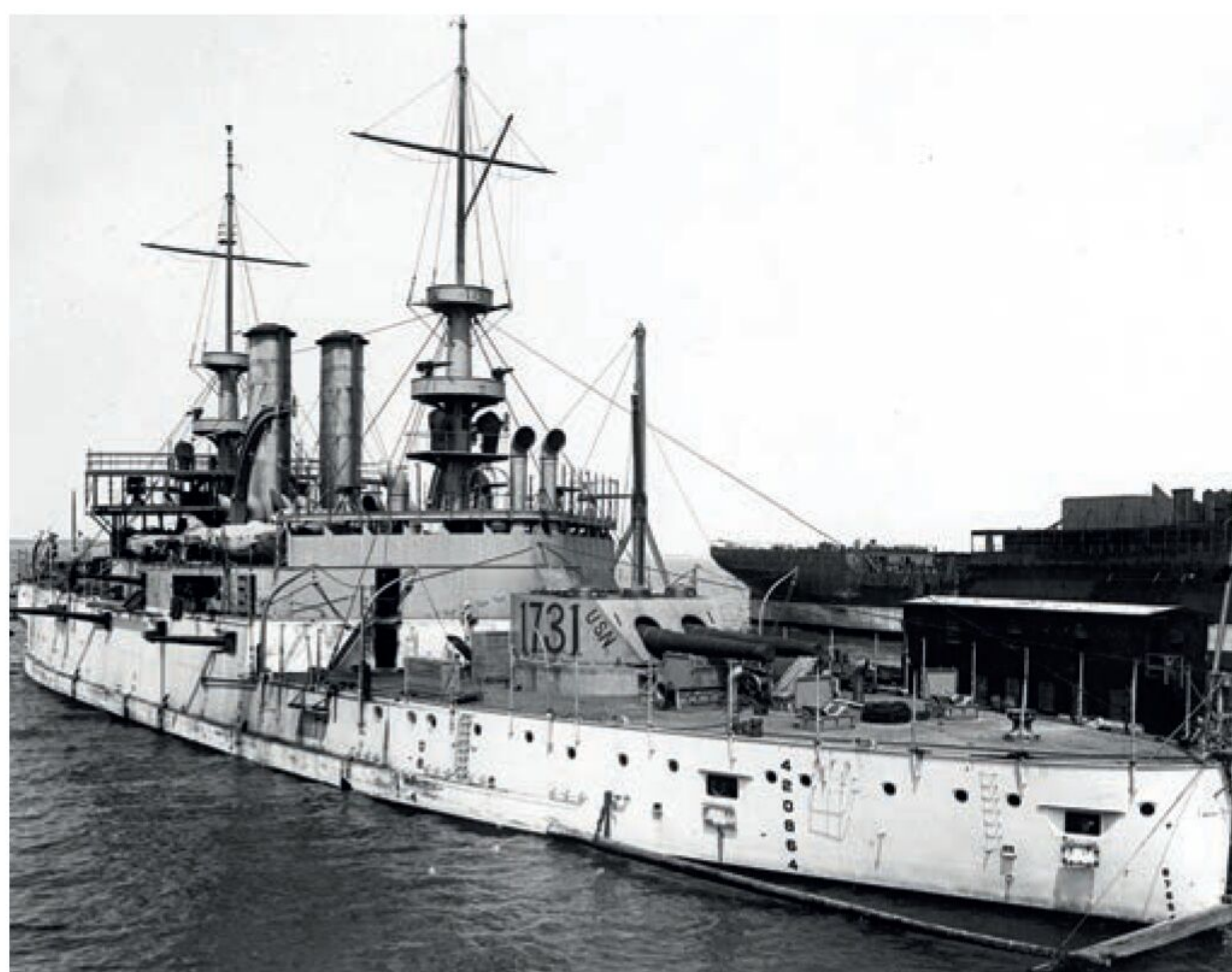
USS Illinois was a pre-dreadnought battleship built by the Newport News Shipbuilding and Drydock Company as the lead ship in her class of three vessels. Her keel was laid on 10 February 1897 and she was launched on 4 October 1898. She was commissioned into the US Navy on 16 September 1901.

After sea and acceptance trials in Chesapeake Bay, Illinois joined the European Squadron in 1902. As part of her duties, she hosted a reception for Prince Henry of Prussia, and she remained in European waters until the following year. In July 1902, she grounded at Kristiania (Oslo), Norway, requiring repair in England. She resumed Mediterranean and South Atlantic fleet operations into 1903, serving as part of the North Atlantic Fleet until 1907.

During this period of her career, she unfortunately collided with two other battleships, USS Missouri on 30 March 1903 and USS Alabama on 31 July 1906. She distinguished herself, however, as one of the battleships of the Great White Fleet which circumnavigated the globe to showcase US military and industrial prestige between December 1907 and February 1909.



▲ USS Illinois at Philadelphia, circa 1919, with main deck six-inch guns removed. She was decommissioned in August 1909, was modernised and returned to service in November 1912.



▼ USS Illinois fitting out at the Newport News SB & DD Co, Virginia, circa 1901, soon after she ran trials. Note the numbers on her hull side, and the broom on her foremast peak.

She remained in the fleet until her reduced usefulness had relegated her to secondary uses in 1919 at Boston. Placed in reserve in 1919, Illinois was lent to New York State Naval Militia in 1921. Under the Washington Naval Treaty constraints, she was disarmed and converted into a floating armory and training barracks in 1924.

In January 1941, to allow her name to be allocated to the new Iowa class battleship, she was reclassified as IX-15 and renamed Prairie State. During World War II she was used as a school of US Naval Reserve Midshipmen and later as a barracks ship. In this guise the former USS Illinois survived until 18 May 1956, when she was sold for breaking up by Bethlehem Steel Company.

USS ALABAMA (BB-8)

BUILDER William Cramp

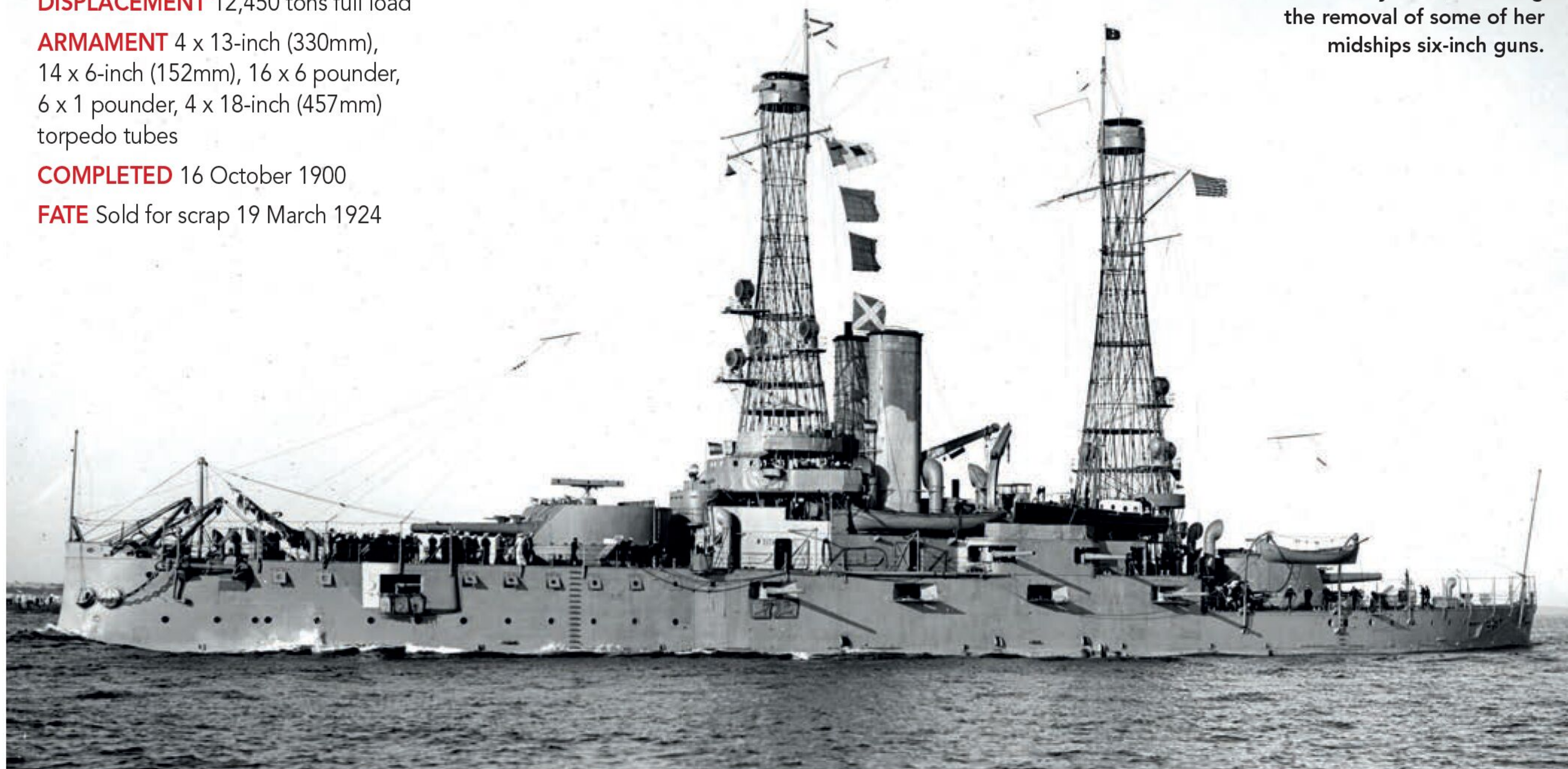
DISPLACEMENT 12,450 tons full load

ARMAMENT 4 x 13-inch (330mm),
14 x 6-inch (152mm), 16 x 6 pounder,
6 x 1 pounder, 4 x 18-inch (457mm)
torpedo tubes

COMPLETED 16 October 1900

FATE Sold for scrap 19 March 1924

USS Alabama (BB-8) under way
on 19 May 1918, following
the removal of some of her
midships six-inch guns.



Construction of the second Illinois class ship, USS Alabama (BB-8), was undertaken by the Philadelphia-based William Cramp and Sons Shipyard. She was laid down on the construction ways on 1 December 1896. The residents of the Kensington neighbourhood watched as the ship slowly took shape, until she was launched into the Delaware River with great ceremony on 18 May 1898. After her fitting-out was completed, she was handed over to the US Navy and was commissioned into the fleet on 16 October 1900.

All three of the Illinois class had brief careers with the US Navy as pre-dreadnought classes of battleship became virtually obsolete overnight with the delivery of HMS Dreadnought, with its steam turbine propulsion, powerful centreline gun turrets and improved armour.

She was fitted with four 13-inch guns and had a top speed of 16 knots, which was slow when compared with HMS Dreadnought. Her first seven years of service were spent in the North Atlantic Fleet, and

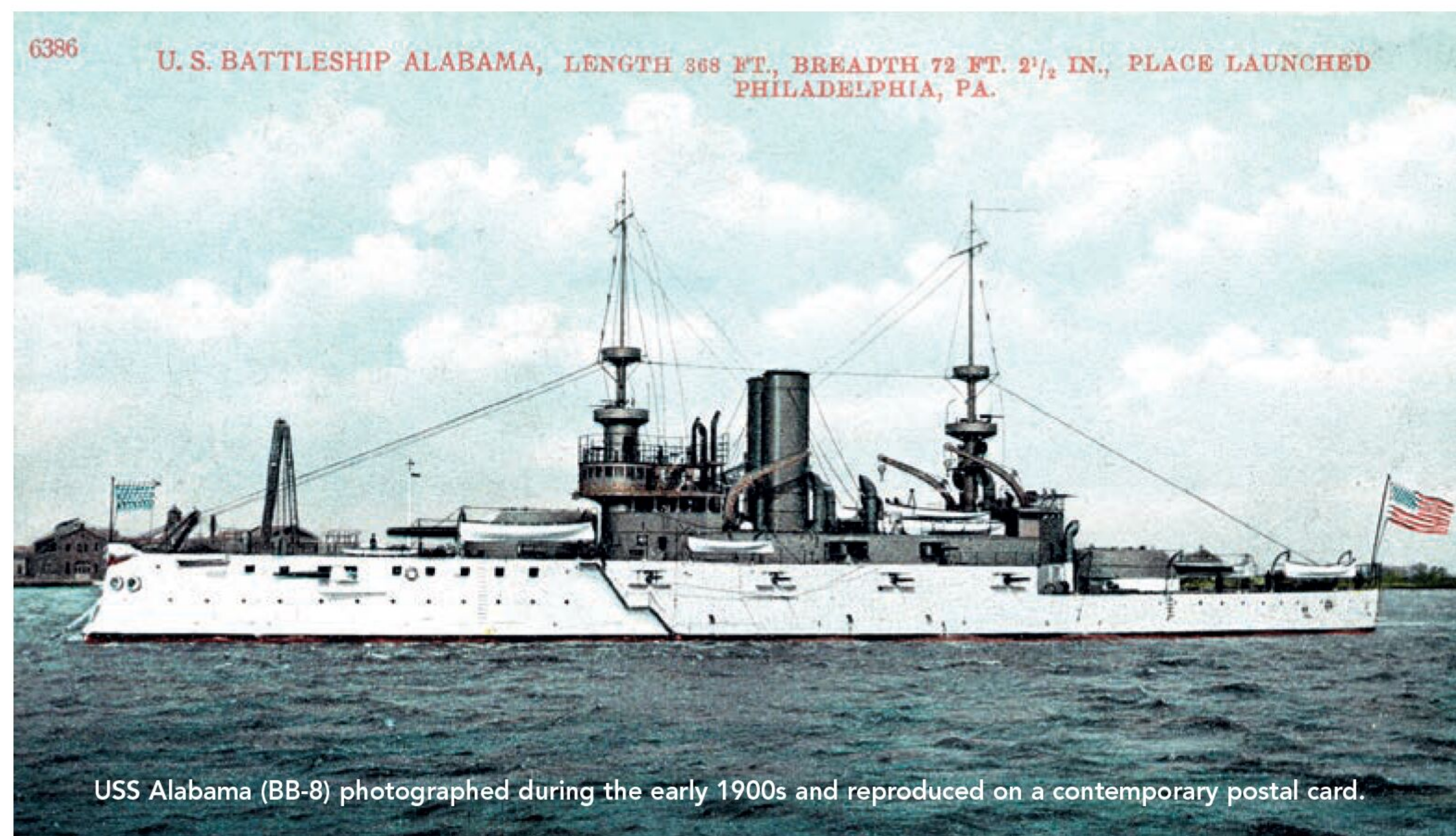
her duties included a tour of Mediterranean ports as part of the Great White Fleet. She would have continued with the fleet's global tour had it not been for machinery problems that prevented her leaving with the rest of the battleships. She did, however, join USS Maine for a shorter circumnavigation.

She was modernised between 1909 and 1912 before joining the Atlantic Reserve Fleet, in which she undertook

secondary training roles throughout World War I. By the end of the war, her usefulness as a frontline unit was at an end and she was allocated to the US War Department for use as a target ship for aerial attack by aircraft of the US Army Air Service in September 1921.

The attacks, led by the famed aviator General Billy Mitchell, were successful and USS Alabama was one of three battleships used as part of these

trials to justify the importance of bombers in naval attacks against surface ships. However, advocates pointed out that USS Alabama was stationary, undefended, unmanned and a sitting duck, and in addition she did not have the latest armour plating, which was then being fitted to the new battleships entering service. In March 1924 what remained of the ship was sold for scrap, and her valuable steel was salvaged.



USS WISCONSIN (BB-9)

BUILDER Union Iron Works

DISPLACEMENT 12,450 tons
full load

ARMAMENT 4 x 13-inch (330mm),
14 x 6-inch (152mm), 16 x 6 pounder,
6 x 1 pounder, 4 x 18-inch (457mm)
torpedo tubes

COMPLETED 14 February 1901

FATE Sold for scrap 1922

The ninth US battleship USS Wisconsin (BB-9) was a pre-Dreadnought type built by Union Iron Works in San Francisco. Her keel was officially laid on 9 February 1897, marking the start of her construction. She was launched on 26 November 1898, with Miss Elizabeth Stephenson acting as sponsor. After fitting out and sea trials, the ship was completed and was commissioned into the US Navy on 4 February 1901.

In 1898 there was a campaign to have Wisconsin christened with a bottle of Schlitz, 'the beer that made Milwaukee famous'. The appeal was rejected by opponents who claimed 'beer is a stupefying drink' that 'increases bulk while diminishing usefulness'. She ended up having one of the shortest careers of all American battleships, effectively leaving service in 1910.

On her first commission, USS Wisconsin assumed the role of flagship of the Pacific Fleet until

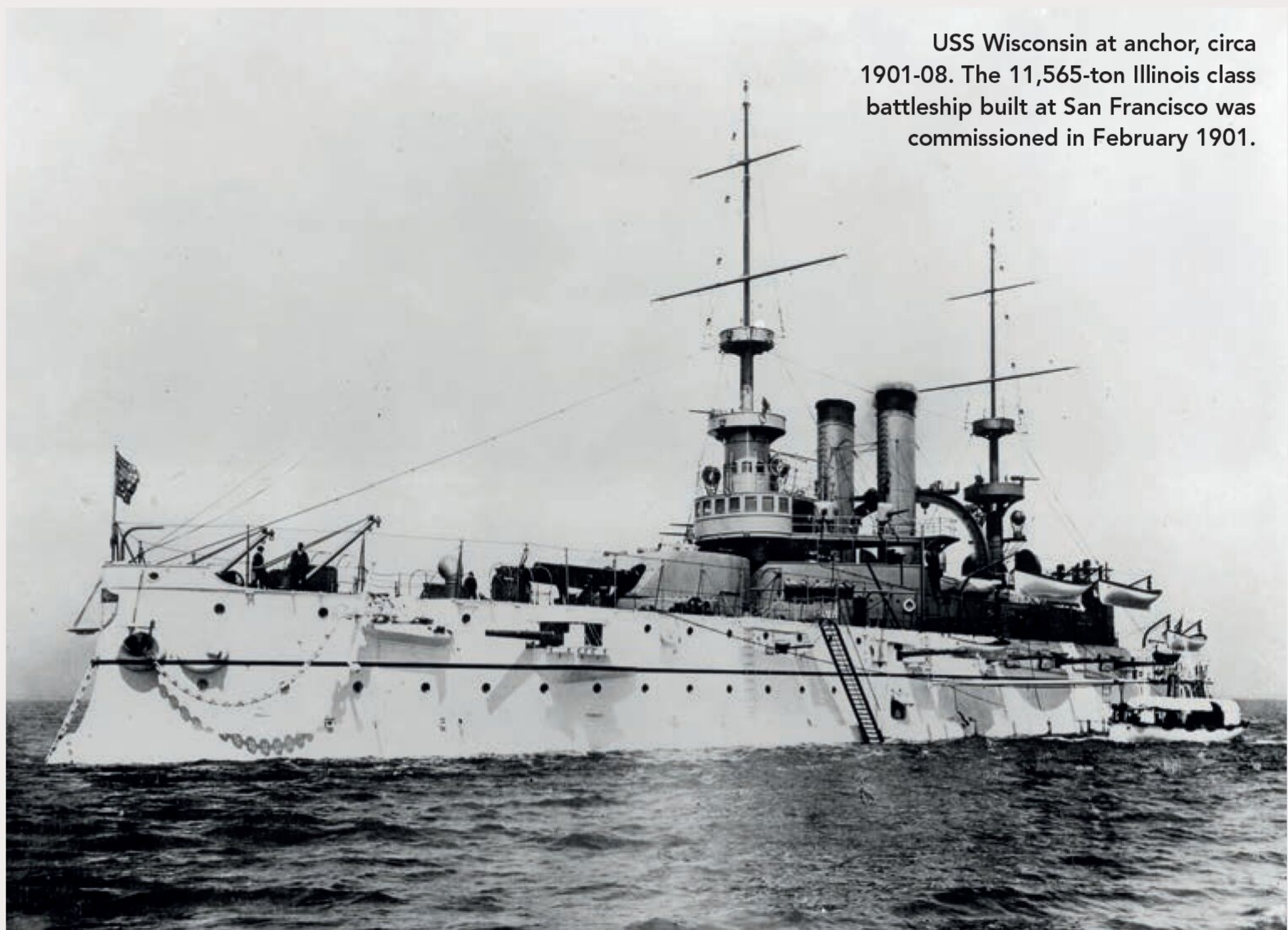
1903 and later as flagship of the Squadron of the Asiatic Fleet. After returning to the United States in 1906 she entered refit, during which her systems and weaponry were updated to the latest standards.

She then joined other battleships for President Theodore Roosevelt's plan to display the might of the US Navy to the world with a deployment of white-painted battleships,

the so-called Great White Fleet. The global cruise lasted from 1908 to 1909 during which time she called at several countries, including the Philippines, Japan and Australia.

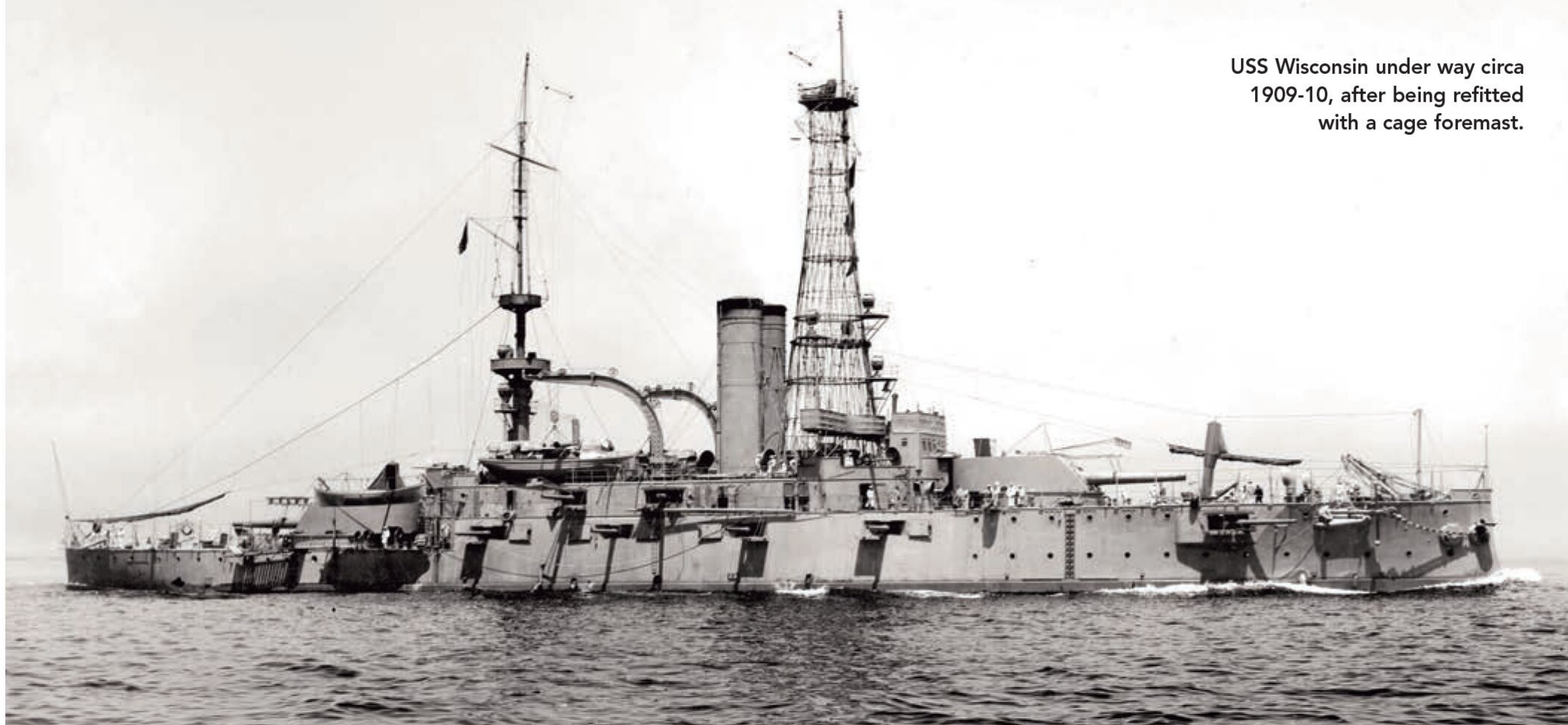
USS Wisconsin's other career highlights included participation during negotiations to end the fighting associated with the 'Thousand Days' War' in Panama. In 1910 USS Wisconsin was placed in the reserve fleet

USS Wisconsin at anchor, circa 1901-08. The 11,565-ton Illinois class battleship built at San Francisco was commissioned in February 1901.



as faster and more powerful battleships had rendered her obsolete. She was retained during World War I as a training ship for cadets from the US Naval Academy at Annapolis and for the training of engine room personnel. She briefly served with the fleet assigned to a patrol squadron, but was decommissioned for the last time in 1920 and was sold for scrap in 1922.

USS Wisconsin under way circa 1909-10, after being refitted with a cage foremast.



4 MAINE CLASS

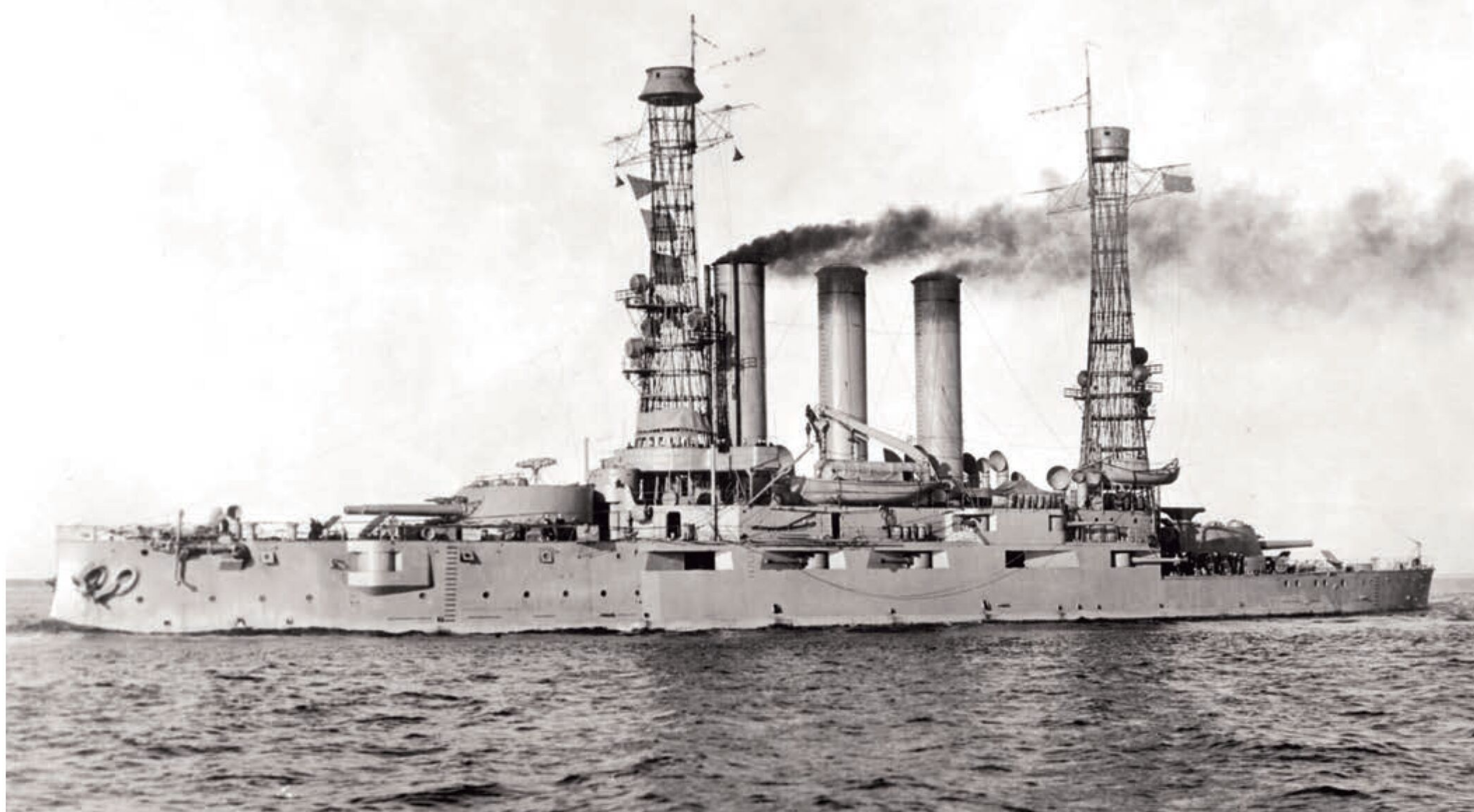
The Maine class battleships USS *Maine*, USS *Missouri* and USS *Ohio* represented a significant step forward in US naval design at the turn of the 20th century. Each ship measured 393ft 11in in length, with a beam of 72ft 3in and a draught of 24ft 4in. These dimensions placed the Maine class ships among the largest and most formidable vessels in the US fleet.

Propulsion was provided by twin screws, each of which was driven by a triple-expansion steam engine, and 20 coal-fired boilers. This machinery delivered a top speed of about 18 knots, a modest but notable improvement over preceding classes. The ships were originally crewed by 561 officers and men, though this number grew during their service lives to between 779 and 813 personnel.

Their armament was typical of contemporary US battleships. The main battery consisted of four 12-inch/40 calibre guns mounted in two turrets (fore and aft), and the secondary battery had 16 6-inch guns. Additionally, the ships carried two submerged 18-inch torpedo tubes. Armour thickness reached 16 inches over magazines and machinery spaces, tapering to six to 12 inches elsewhere.

USS MAINE (BB-10)

The battleship USS Maine under way, circa 1918, was a formidable sight.



BUILDER William Cramp, Philadelphia

DISPLACEMENT 13,900 tons full load

ARMAMENT 4 x 12-inch (305mm), 16 x 6-inch (152mm), 8 x 3 pounders, 6 x 1 pounders, 2 x 18-inch (457mm) torpedo tubes

COMPLETED 29 December 1902

FATE Broken up 1922

USS Maine served as the lead ship in its pre-dreadnought class. She was the successor to the ill-fated armoured cruiser of the same name which was lost in an explosion in Havana

Harbour on 15 February 1898, which killed 266 crew and became a major catalyst for the Spanish-American War, as it fuelled tensions between the US and Spain. Construction of the battleship began in February 1899 at the shipyard of William Cramp and Sons, and she was launched on 27 July 1901. Following her completion, she entered service in December 1902. She was armed with a main battery of four 12-inch guns and boasted a top speed of 18 knots.

USS Maine spent her entire career (apart from her time as

part of the Great White Fleet) operating in the North Atlantic Fleet, serving as flagship until 1907. In the same year USS Maine joined the Great White Fleet which sailed around the world promoting American industrial and military might. However, her high coal consumption meant that USS Maine only went as far as San Francisco.

Afterwards, she assumed the role of the third squadron flagship during the American involvement in World War I from April 1917 to November 1918. By this time, only midway through

her career, she was relegated to secondary roles, assuming the task of training ship following her return to the United States.

Maine continued this role until she was decommissioned on 15 May 1920 at the Philadelphia Navy Yard. She was laid up for a year and a half before being sold on 26 January 1922 to J.G. Hitner and W.F. Cutler to be broken up. By 17 December 1923 she had been disarmed in accordance with the Washington Naval Treaty, which mandated significant reductions in naval strength, and was scrapped.

USS MISSOURI (BB-11)

BUILDER Newport News Shipbuilding and Dry Dock Co

COMPLETED 1 December 1903

DISPLACEMENT 13,900 tons full load

ARMAMENT 4 x 12-inch (305mm), 16 x 6-inch (152mm), 8 x 3 pounders, 6 x 1 pounders, 2 x 18-inch (457mm) torpedo tubes

FATE Broken up 1922

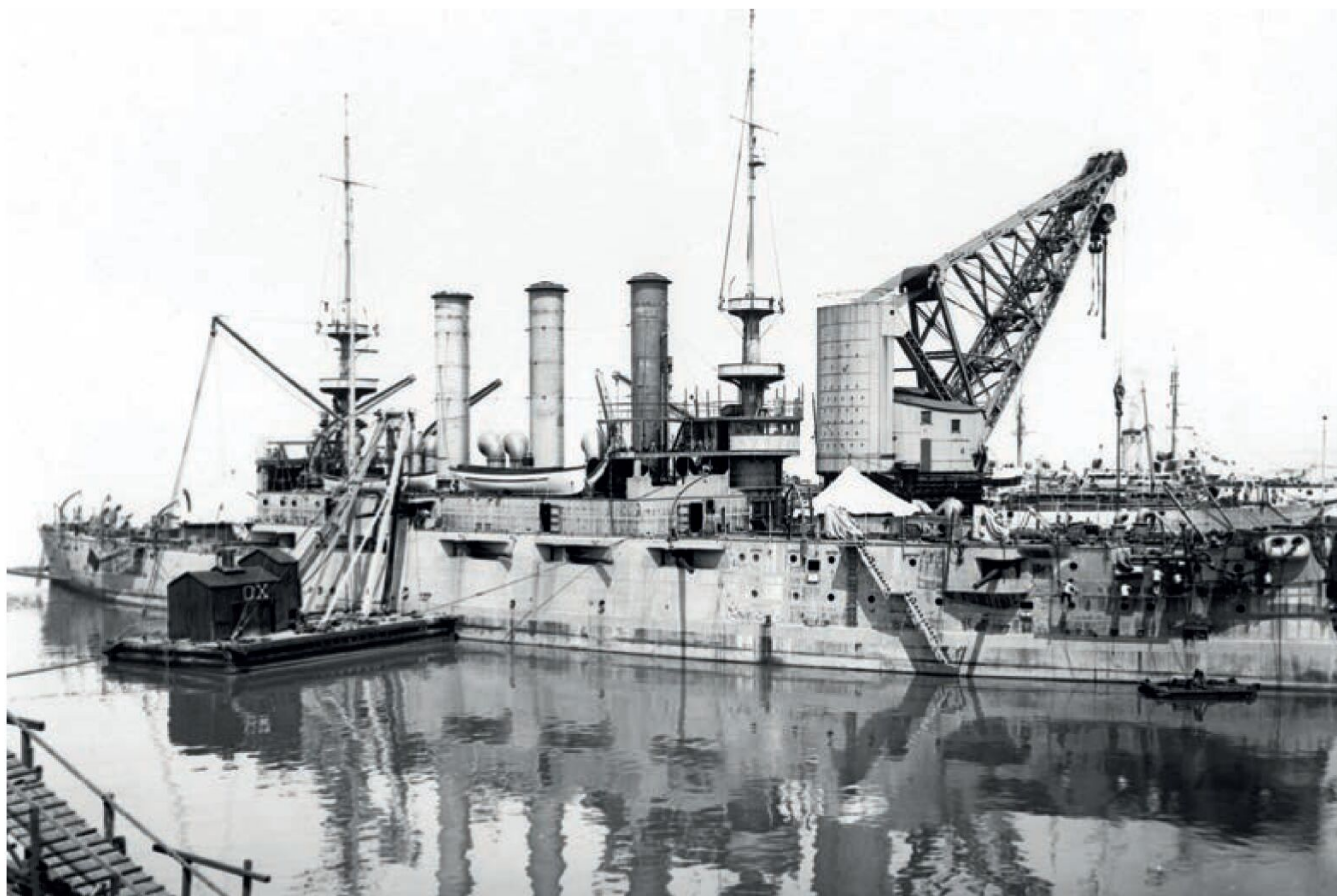
USS Missouri made history when she became the first battleship to transit the then newly completed and opened Panama Canal in 1915. The American-controlled waterway was crucial to the US Navy's two-ocean policy as it enabled warships to transit between the Pacific and Atlantic Oceans and vice-versa with ease.

USS Missouri was the second of the Maine class battleships and was built by Newport News Shipbuilding and Dry Dock Co. She was launched in December 1901 and was commissioned into the fleet in December 1903. She was armed with a main battery of four 12-inch guns and could steam at a top speed of 18 knots.

Throughout her career, Missouri served in the North Atlantic Fleet, except for her time as part of the Great White Fleet which circumnavigated the world between 1907 and 1909. During this cruise, USS Missouri visited ports in the Caribbean, South America, Australia, Asia and the Mediterranean.

Following her involvement in the global deployment, Missouri spent much time in reserve before being reactivated for training cruises or to fill gaps in the fleet when other vessels were taken out of service for refits and modernisation.

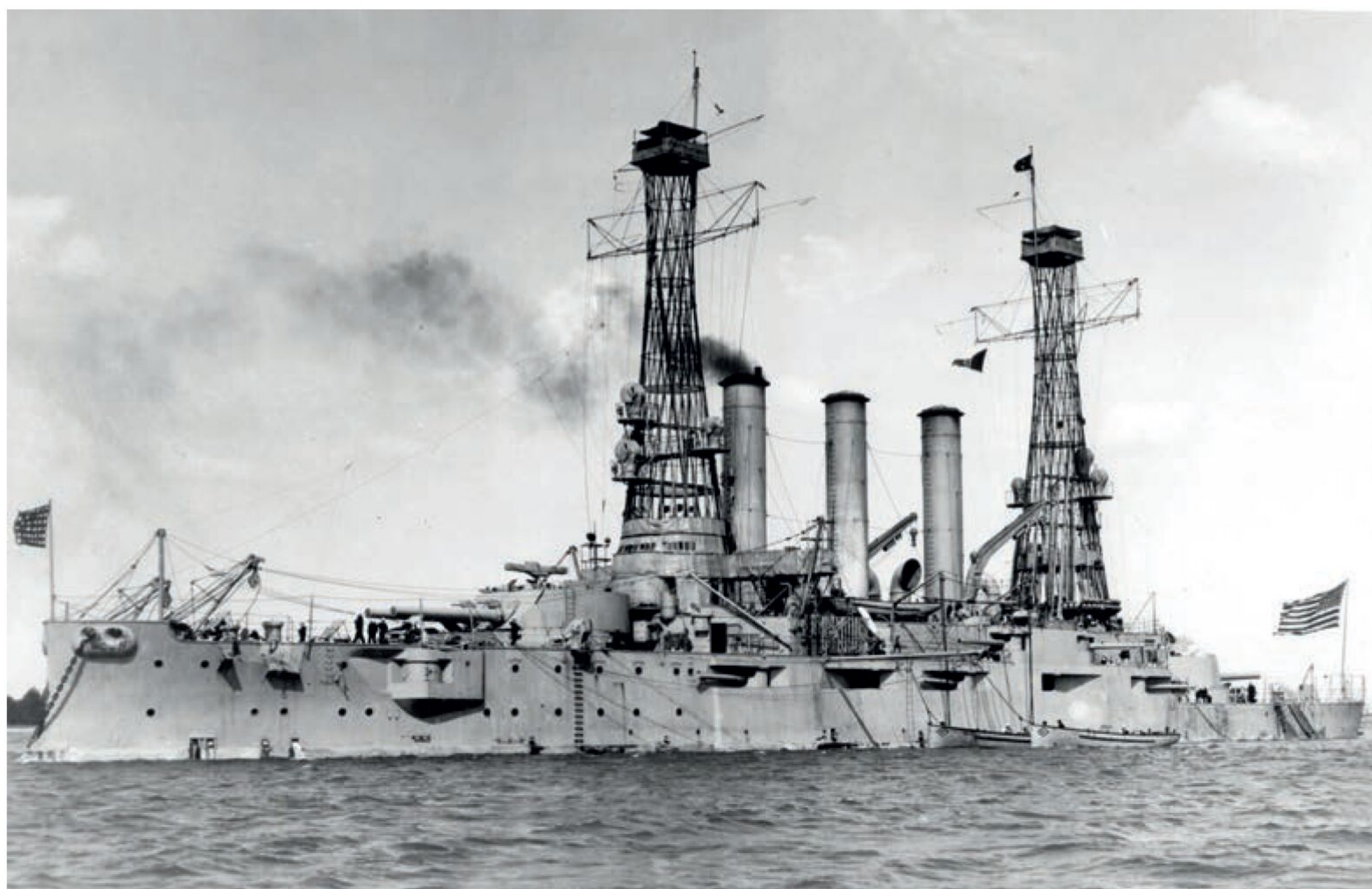
During World War I Missouri was used to train crews. She transported troops home from Europe at the end of the war in 1918 and 1919, and this proved to be her last active duty. She was decommissioned from US Navy service on 8 September 1919, and in January 1922 was sold to a Philadelphia firm for breaking up.



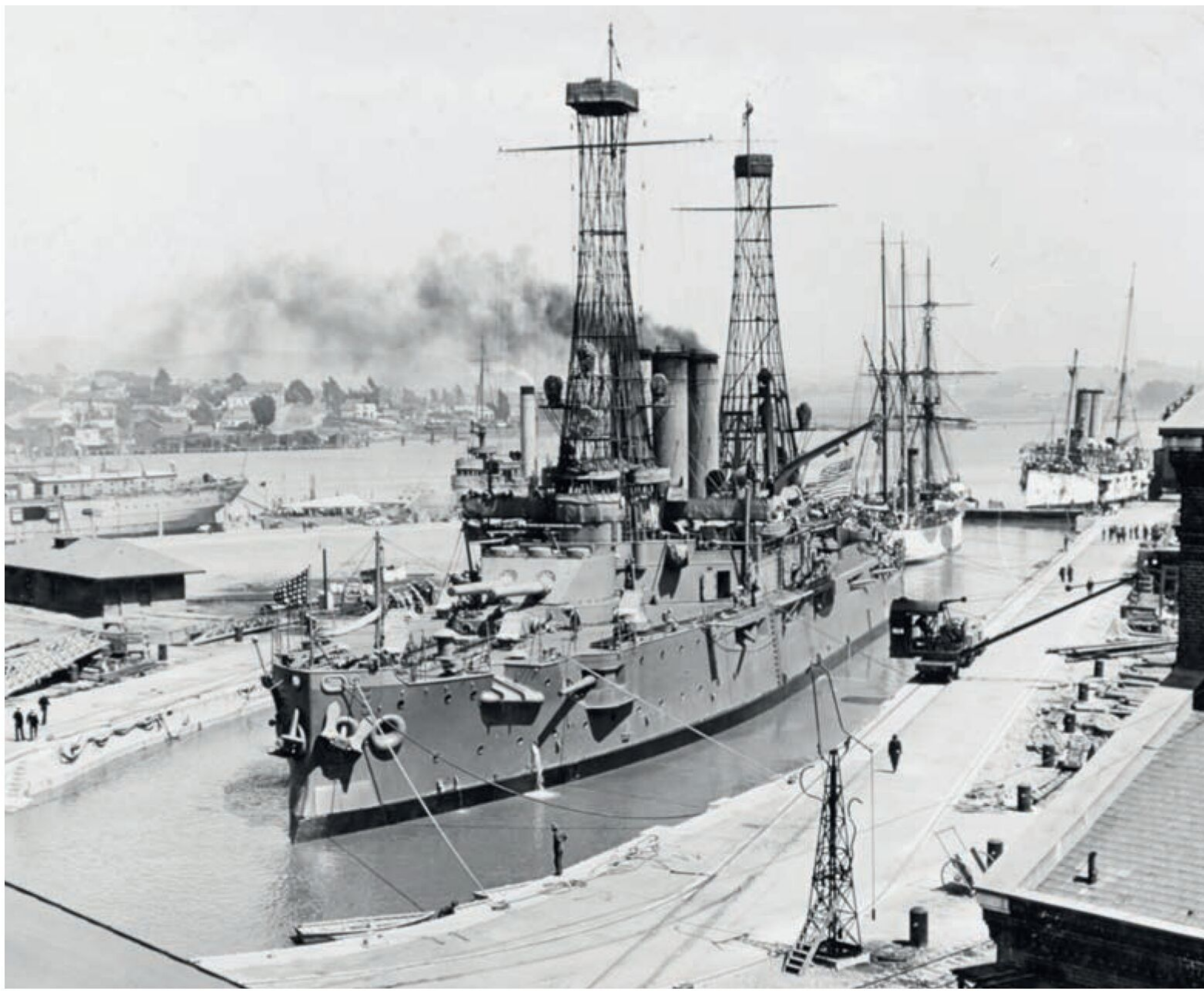
▲ USS Missouri being fitted out at the Newport News Shipbuilding and Dry Dock Company on 30 June 1903, with a crane barge alongside.

► USS Missouri pictured in late 1909 with one cage mast installed. She was reduced temporarily to reserve status on 1 May 1910 in Boston.

▼ USS Missouri (BB-11) flying a Rear Admiral's flag, circa 1918. The Maine class battleship, was built at Newport News, Virginia.



USS OHIO (BB-12)



BUILDER Union Iron Works

DISPLACEMENT 13,900 tons full load

ARMAMENT 4 x 12-inch (305mm), 16 x 6-inch (152mm), 8 x 3 pounders, 6 x 1 pounders, 2 x 18-inch (457mm) torpedo tubes

COMPLETED 4 October 1904

FATE Sold for scrap March 1923

The pre-Dreadnought USS Ohio was built by Union Iron Works, with the first steel plates of her keel being laid on 22 April 1899. The build progressed steadily, and the ship was launched on 18 May 1901. She was commissioned into the US Navy on 4 October 1904. She was armed with a main battery of four 12-inch guns and had a maximum speed of 18 knots.

Ohio's main armoured belt was 11 inches thick over the magazines and the propulsion machinery spaces and 8 inches elsewhere. The main battery gun turrets had 12-inch thick faces, and the supporting barbettes had the same thickness of

▲ USS Ohio (BB-12) in Dry Dock No.2 at the Mare Island Naval Shipyard, California, circa 1915. USS Newport (Gunboat No.12) is also in the dry dock, astern of Ohio. After a training cruise for midshipmen from the US Naval Academy during 1914, Ohio was transferred to the Reserve Fleet based at Philadelphia.

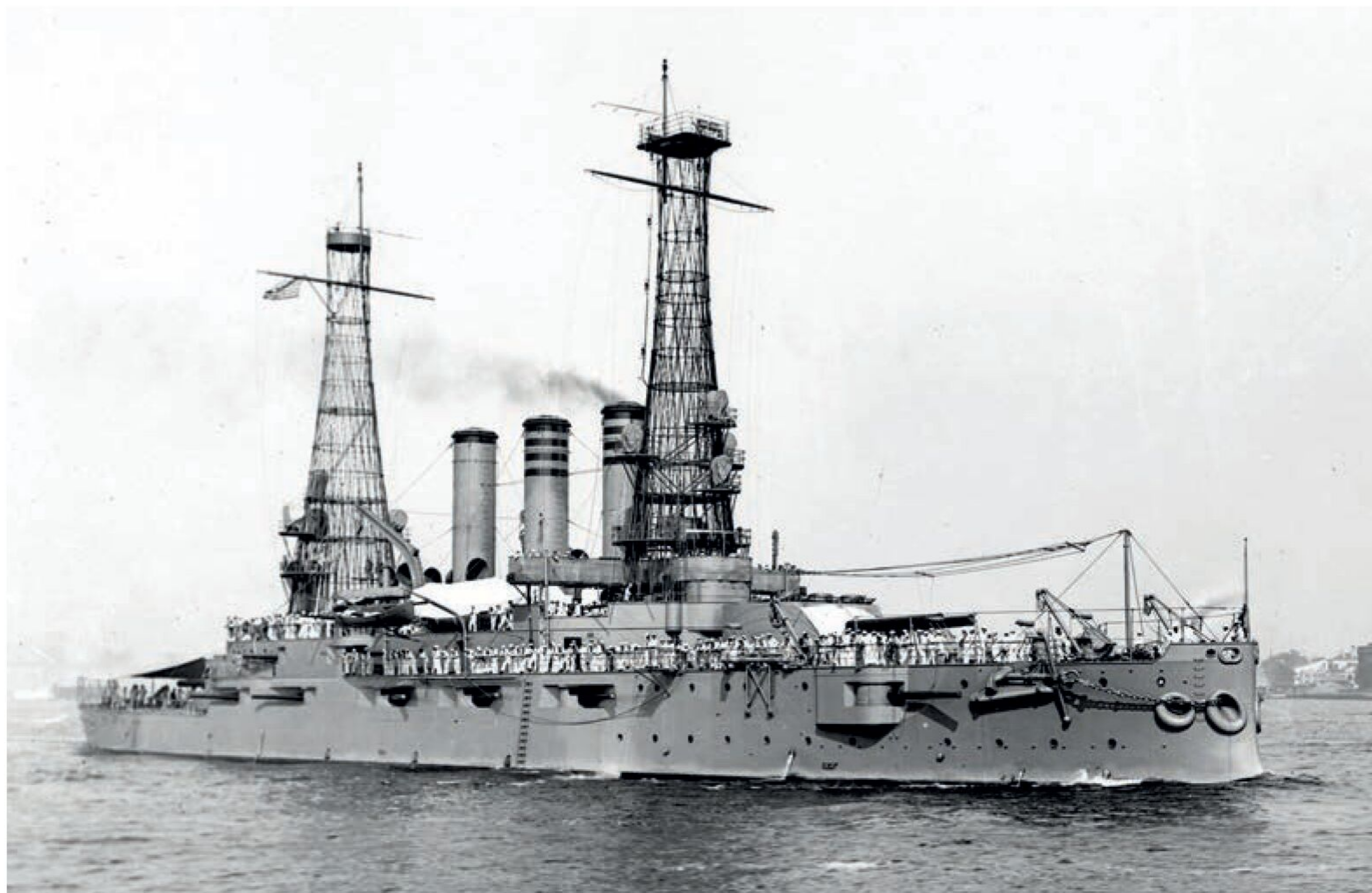
▼ USS Ohio (BB-12) under way off New York City on 3 July 1911 with the ship's company lining the decks. She was an older and obsolete pre-Dreadnought design and, after World War I, as there was limited scope for her modernisation, she was struck from the Naval Vessel Register on 31 May 1922 and sold for scrap.

armour plating on their exposed sides. Six-inch-thick armour protected the secondary battery. The conning tower had ten-inch thick sides

Ohio initially served with the Asiatic Fleet touring south-east Asia, and frequently visiting Japan, China and the Philippines. In December 1907 she joined the Great White Fleet for the global deployment of American battleships before joining the Atlantic Fleet.

She was assigned to assist with the American efforts during the Mexican Revolution of 1914 before assuming the role of training ship during World War I. After the war she took on secondary roles before being decommissioned and allocated for use as a target control ship. She was used to control the radio-controlled former battleship Iowa.

Ohio was decommissioned in July 1919 as a result of the Washington Naval Treaty which restricted the tonnage available to the major naval powers for battleship construction and retention. The aim of the treaty was to try to prevent a spiral of naval construction that could lead to a conflict. USS Ohio was eventually sold for scrapping on 24 March 1923.



5 VIRGINIA CLASS

The Virginia class of battleships was developed in the inter-war period following World War I, primarily as part of the Navy's modernisation efforts under the constraints of the Washington Naval Treaty of 1922. The Navy took what had been learned from the Maine class and, rather than completely redesigning them, aspects of the design deemed successful

were employed and enhanced. Therefore, the Virginia was basically an evolution of the previous design. When USS *Virginia* entered service, she had a displacement of around 15,000 tons and carried a main armament of four 12-inch guns in two turrets positioned fore and aft.

Secondary armament consisted of eight 8-inch and 12 6-inch guns in casements,

plus 24 one-pounder guns and four 21-inch submerged torpedo tubes. The Virginia class was for its time a very powerful and reasonably balanced design, but its limited speed of 19 knots resulted in the ships having comparatively short careers in the US Navy, as developments in steam propulsion and weapon design quickly rendered them obsolete.

USS VIRGINIA (BB-13)

BUILDER Newport News Shipbuilding and Drydock Company

DISPLACEMENT 16,352 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 6-inch (152mm), 12 x 3-inch (76mm), 12 x 3 pounders, 4 x 21inch (533mm) torpedo tubes

COMPLETED 13 August 1906

FATE Sunk as target 5 Sept 1923

The lead vessel of the Virginia class, USS *Virginia*, was built by Newport News Shipbuilding and Drydock Company, with her keel being laid on 21 May 1902. She was launched on 6 April 1904 and was commissioned into the US Navy on 7 May 1906.

Her initial service was along the north-eastern coast of the United States, but she did visit Cuba in the autumn of 1906. She returned in March and

April the following year. In 1907 the battleship played a major role in the celebrations to commemorate the 300th anniversary of the founding of the English settlement at Jamestown, Virginia in December 1907.

USS *Virginia* was one of President Theodore Roosevelt's Great White Fleet to sail around the world and showcase American military power. Her journey took her to South America, the West Coast of the United States, Hawaii, the Philippines, Japan, China, Ceylon and ports in the eastern Mediterranean before concluding her journey

back at Hampton Roads in Virginia in February 1909.

After two years on deployment, the battleship needed maintenance, and she spent the early months of 1909 in dockyard hands being upgraded with new cage masts and a return to an overall grey colour scheme. In late 1909 she crossed the Atlantic to visit the UK and France, and later operated in the Caribbean.

Prior to America's entry into World War I, USS *Virginia* was one of the fleet of vessels deployed in

Mexican waters during the US intervention at Veracruz. In 1917 she was initially detailed with the training of new

recruits for the navy, before she escorted convoys across the Atlantic to and from Europe.

At war's end the vast number of troops in Europe needed to be transported home and there were insufficient commercial transports, so USS *Virginia* took over 6,000 soldiers back to the US over the course of several voyages between December 1918 and July 1919.

The battleship was then placed in reserve but was redesignated as BB-13 in June 1920. Two months later, on 13 August 1920, she was decommissioned and in 1923 transferred to the War Department for use as a target vessel. She was towed to a position off the coast of North Carolina and was subjected to a series of increasingly deadly aerial attacks to evaluate the susceptibility of battleships to bombing by aircraft. She sank on 5 September 1923.

► USS *Virginia* in port, circa 1906-07.



USS NEBRASKA (BB-14)

BUILDER Moran Brothers
Shipbuilding

DISPLACEMENT 16,352 tons
full load

ARMAMENT 4 x 12-inch (305mm),
8 x 8-inch (203mm), 12 x 6-inch
(152mm), 12 x 3-inch (76mm),
12 x 3 pounders, 4 x 21-inch
(533mm) torpedo tubes

COMPLETED 1 July 1907

FATE Sold for scrap November 1923

The second Virginia class ship was USS Nebraska, built by the Moran Brothers Shipyard at Seattle. The first steel for the ship was laid down on American Independence Day in 1902. She was the first ship in US Navy history to be named after the state of Nebraska. The battleship was launched on 7 October 1904 and, after a further three years of fitting out and sea trials, she commissioned into service on 1 July 1907.

As one of the newest battleships in the fleet it was almost a forgone conclusion that she would be part of the Great White Fleet during its global circumnavigation. On completion of this, she assumed her normal routine of training and ceremonial duties as part of the Atlantic Fleet until 1914.

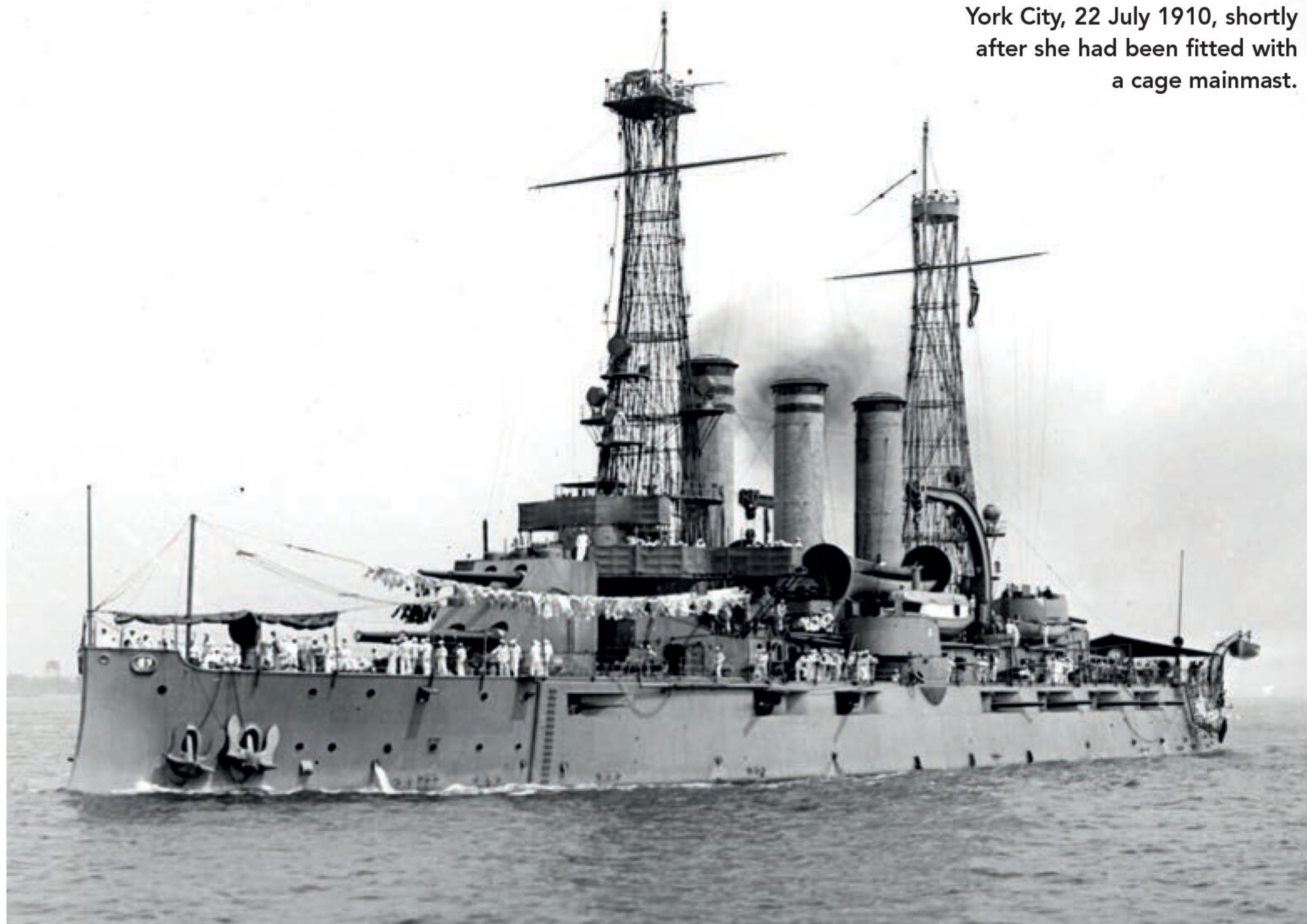
The Mexican Revolution and its effects on the southern US States consumed a great deal of time and effort for the US Navy with numerous battleships being deployed, including Nebraska twice, between 1914 and 1916, to protect American interests in the region.

On Nebraska's return home, she was placed in reserve but reactivated shortly before the US entered World War I in April 1917. During the conflict, she was assigned to the Battleship Force of the Atlantic Fleet, but served mostly as a training ship for new recruits and as a convoy escort.

At the end of the war, Nebraska was involved in transporting troops home from France.

After a brief period of operational service in the Pacific, Nebraska was decommissioned on 2 July 1920. Three years later in November 1923 she was sold for breaking.

USS Nebraska (BB-14) off New York City, 22 July 1910, shortly after she had been fitted with a cage mainmast.

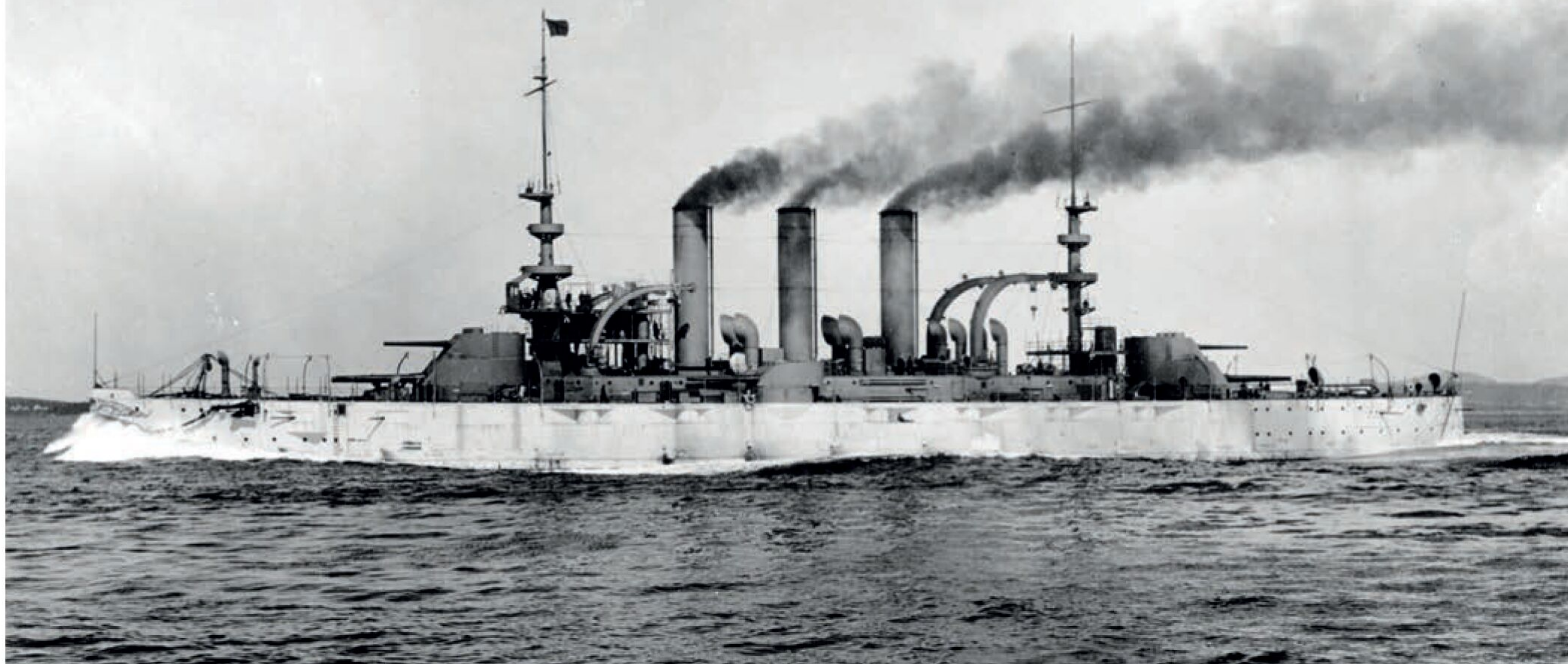


USS Nebraska in 1908, probably in a US West Coast harbour.



USS GEORGIA (BB-15)

USS Georgia (BB-15) making 17.7 knots during her trials on 13 June 1906. Her six-inch broadside guns have yet to be installed.



BUILDER Bath Iron Works

DISPLACEMENT 16,352 tons full load

ARMAMENT 4 x 12i-nch (305mm), 8 x 8-inch (203mm), 12 x 6-inch (152mm), 12 x 3-inch (76mm), 12 x 3 pounders, 4 x 21-inch (533mm) torpedo tubes

COMPLETED 24 September 1906

FATE Scrapped November 1923

The third Virginia class battleship, USS Georgia, was built by Bath Iron Works in Maine. Construction commenced on 31 August 1901 and the ship was launched on 11 October

1904. She was commissioned as a fleet unit on 24 September 1906. The ship was armed with an offensive battery of four 12-inch (305mm) guns and eight eight-inch (203mm) guns, and had a top speed of 19 knots.

Although her service was relatively brief, the battleship made an impact on the global scene, notably for her participation in The Great White Fleet between 1907 and 1909, but before that when she hit the headlines after a tragic incident. On 15 July 1907, while the ship was operating off Cape Cod, a

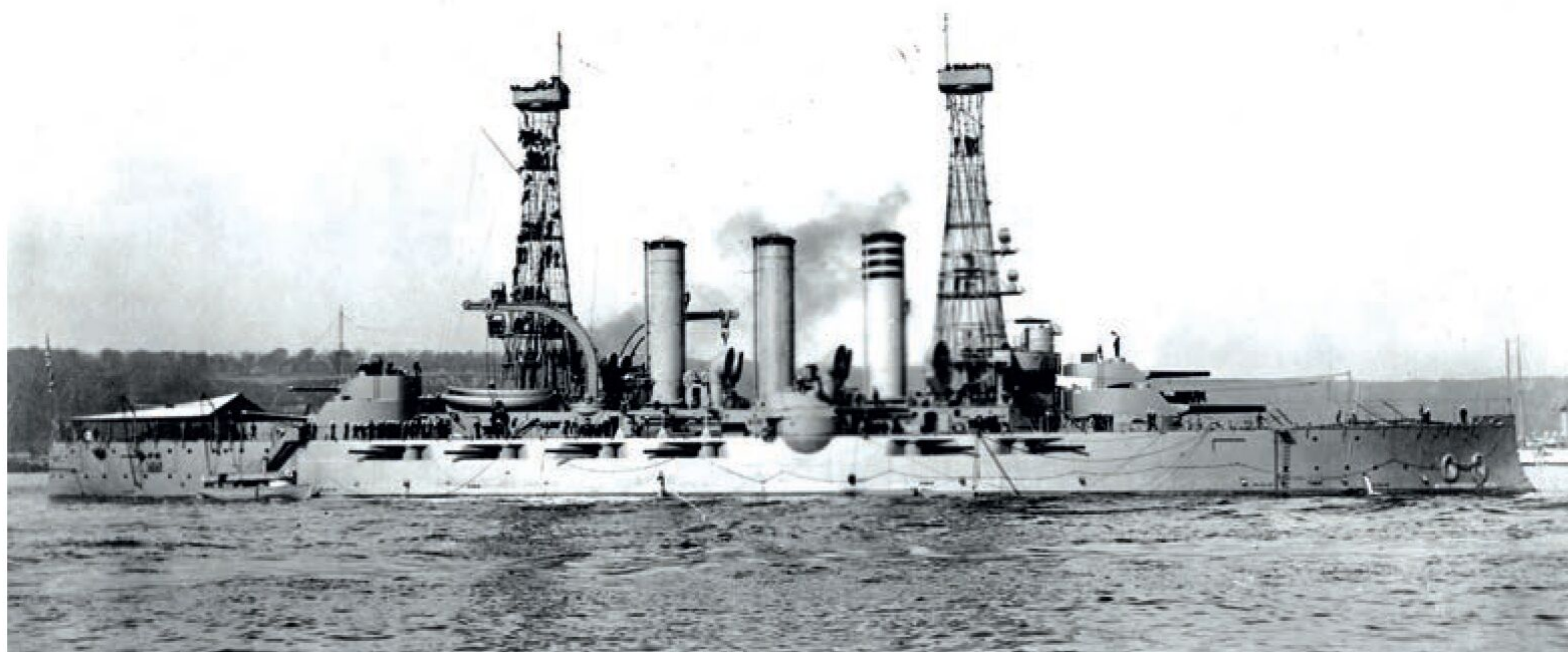
devastating explosion ripped through her aft eight-inch gun turret and prematurely-ignited propellant charges exploded, causing a chain reaction. The blast killed ten men and injured another 11. The gunnery trials were abandoned, and the ship was taken in hand by the dockyard, where her damage was repaired over the course of several months.

In January 1914 USS Georgia was deployed off Mexico for two months during the Mexican Revolution but only intervened when American interests or

people were in danger. On 22 May 1915 she was in collision with the Royal Navy battlecruiser HMS Renown while the two ships were operating together in the North Atlantic. The ships each suffered only minor damage.

From 1917 USS Georgia served as a training ship and convoy escort for Allied merchant ships heading to and from Europe, protecting them against the threat of German submarines, which were by then involved in all-out war against merchantmen and would sink them without warning. One such convoy which Georgia protected comprised 20 ships carrying over 10,000 American troops to the front line in France in September 1917.

Georgia was decommissioned on 15 July 1920 and, after languishing for three years in reserve, was sold for breaking up. Under the terms of the 1922 Washington Naval Treaty, the ship was sold for scrapping on 1 November 1923.



◀ USS Georgia photographed circa 1912, probably in New York Harbour.

USS NEW JERSEY (BB-16)

BUILDER Fore River Shipyard

DISPLACEMENT 16,352 tons
full load

ARMAMENT 4 x 12-inch (305mm),
8 x 8-inch (203mm), 12 x 6-inch
(152mm), 12 x 3-inch (76mm), 12 x
3 pounders, 4 x 21-inch (533mm)
torpedo tubes

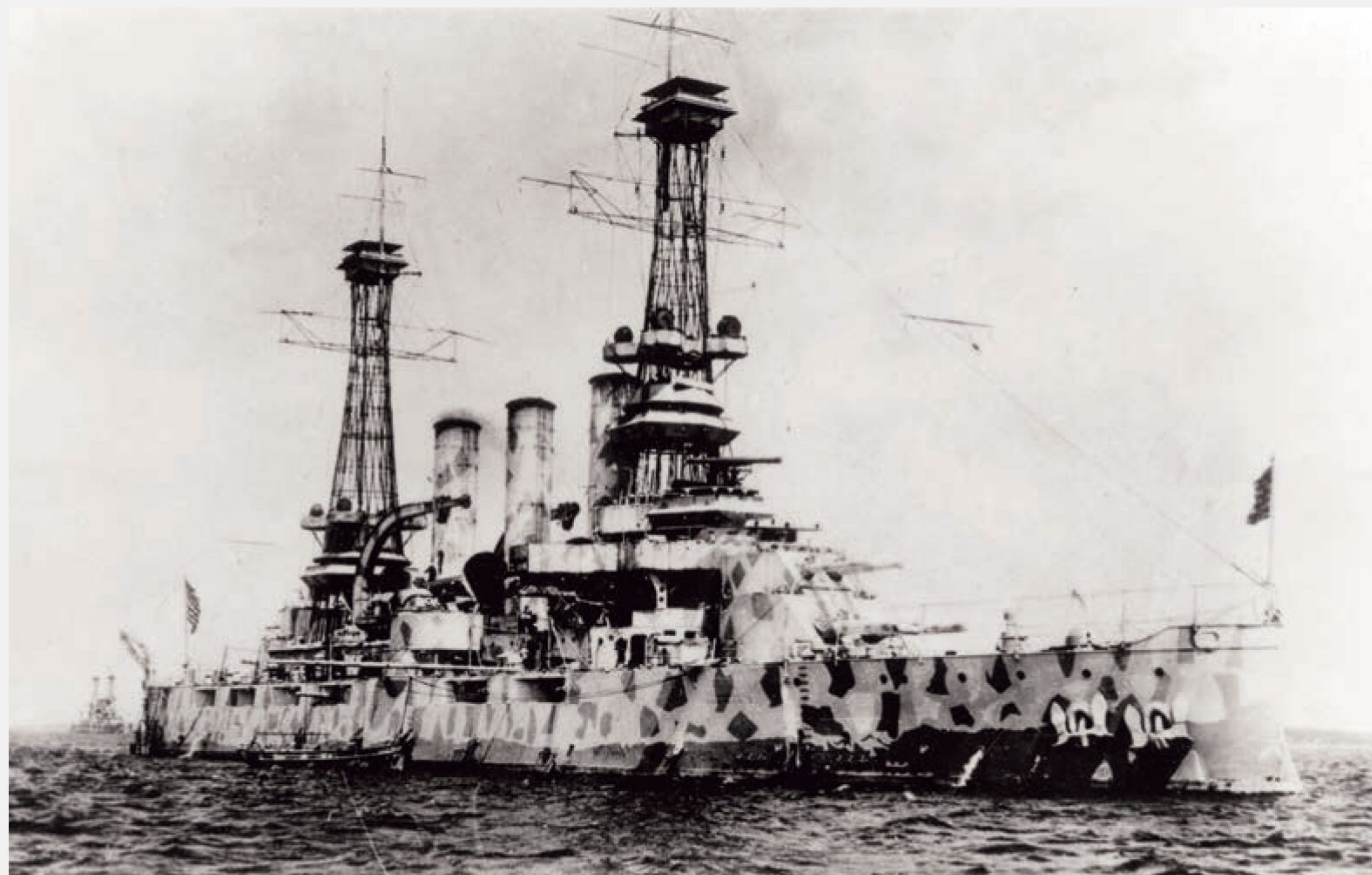
COMPLETED 12 May 1906

FATE Sunk as a target 5
September 1925

The fourth member of the Virginia class was built by the Fore River Shipyard in Quincy, Massachusetts between 3 May 1902 and 12 May 1906, when she commissioned into the US Navy. Like all the other members of the class, USS New Jersey represented the United States as part of the Great White Fleet which toured the world between 1907 and 1909, and she was also present during the Mexican Revolution, safeguarding American interests.

When World War 1 ended in November 1918, New Jersey was one of the ships used to transport American soldiers home from Europe. In the course of four voyages, between late 1918 and 9 June 1919, she repatriated 5,000 soldiers. New Jersey was decommissioned on 6 August 1920.

In the early 1920s proponents of airpower suggested that the era of the great battleship was over and to prove their point arranged a series of trials with aircraft armed with bombs against static redundant



warships. One of these target ships was the former New Jersey. On 5 September 1923 she was attacked by Martin NBS-1 bombers which scored direct hits that broke the ship's back and she quickly sank.

▲ USS New Jersey wearing camouflage paint, circa 1918, before her four troop-carrying voyages.

▼ USS New Jersey photographed in 1906-07, with a steam launch and coal barges alongside.



USS RHODE ISLAND (BB-17)

BUILDER Fore River Shipyard

DISPLACEMENT 16,352 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 6-inch (152mm), 12 x 3-inch (76mm), 12 x 3 pounders, 4 x 21-inch (533mm) torpedo tubes

COMPLETED 19 February 1906

FATE Sold for scrap
1 November 1923

The final member of the Virginia class was USS Rhode Island, which was built by the Fore River Shipyard in Quincy, Massachusetts. She was laid down on 1 May 1902. In 1904 a fire broke out on board the incomplete battleship that took several hours to extinguish.

After the necessary repairs following the fire, and final fitting out, Rhode Island was launched on 17 May 1904 but, due to industrial action by shipworkers at the yard, her launching was a lacklustre affair, attended by only a handful of shipyard and navy representatives.

She ran aground on a nearby sandbank where she was stuck

for two days before being freed. She was commissioned into the Atlantic Fleet on 19 February 1906 under the command of Captain William S. Sims.

The early years of her career were principally spent training crews, but between 1907 and 1909 she was one of the units allocated to the Great White Fleet, after which she operated mostly in the Atlantic. That changed in late 1913 with the Mexican Revolution requiring her continued presence in the Caribbean to safeguard American interests in the region.

In 1916 and early 1917 America initially remained neutral after war broke out in Europe, but continued German submarine activity meant that the US Navy could not stand by

idling as ships were attacked. The US Navy's response was to co-ordinate anti-submarine patrols and USS Rhode Island was one of the ships so detailed off the US East Coast. This role continued after the US declaration of war against Germany in April 1917.

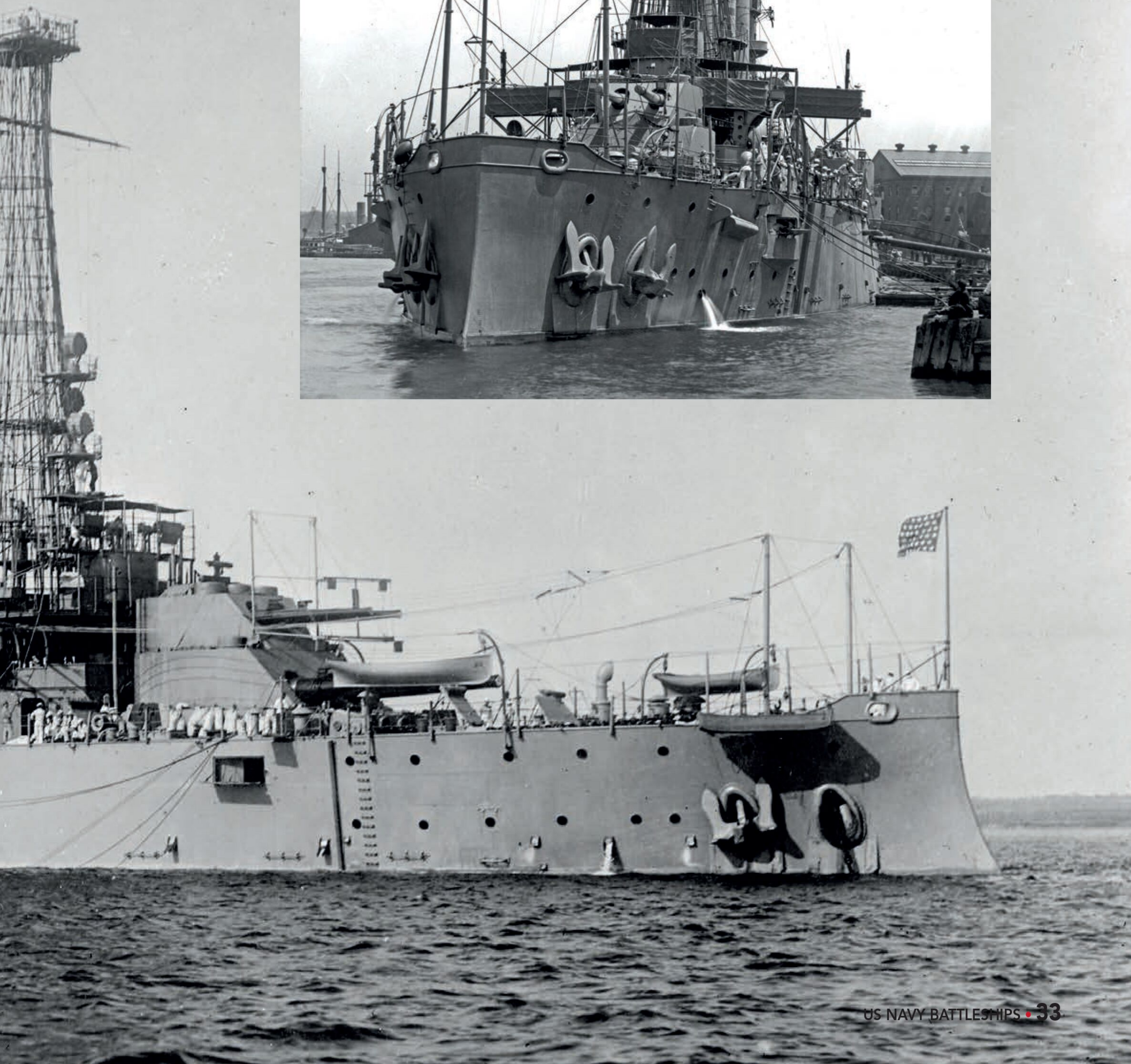
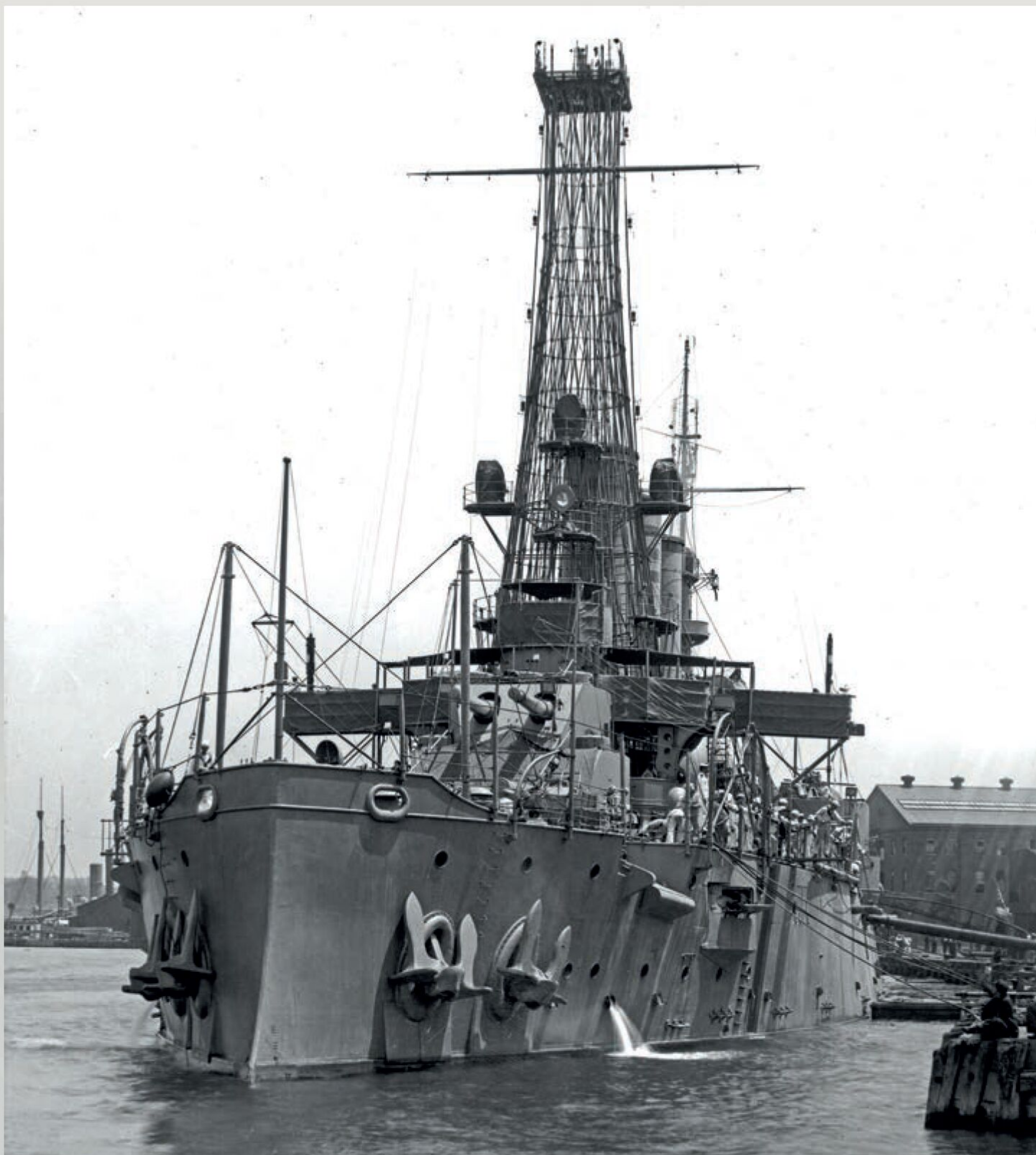
Following the German surrender in late 1918 USS Rhode Island repatriated troops in

Europe back to the United States, transporting thousands over the course of five transatlantic trips. Then in the twilight of her career, USS Rhode Island briefly operated in the Pacific in 1919 before being placed in reserve and was decommissioned on 30 June 1920. She was sold for breaking under the terms of the Washington Naval Treaty in 1923.



► USS Rhode Island at the New York Navy Yard, 8 July 1909. Her anchors and newly-installed cage foremast are prominent features.

▼ USS Rhode Island at anchor, circa 1910, after she had been refitted with two cage masts. The gun aiming practice devices can be seen fitted to her turrets.



6 CONNECTICUT CLASS

The Connecticut class battleships represented a significant evolution in US Navy capital ship design during the early 20th century. Measuring 139.1m in length, with a beam of 23.4m and a draught of 7.5m, these vessels were conceived as an improvement over the preceding Virginia class. Their displacement was increased slightly, to 18,000 long tons, allowing for enhanced stability and protection. Propulsion was provided by twin screws each driven by a triple expansion steam engine, delivering 16,500shp and enabling a top speed of

18 knots, which was competitive for pre-dreadnought battleships of the era.

Armament was formidable and reflected the transitional nature of battleship design before the advent of the all-big-gun dreadnought. The main battery consisted of four 12-inch Mk.5 guns mounted in twin turrets, supported by a diverse secondary battery: eight eight-inch guns, 12 seven-inch guns, and ten three-inch guns, supplemented by four submerged 21-inch torpedo tubes. This mixed-calibre arrangement was typical of pre-dreadnoughts, intended to counter

both enemy battleships and smaller vessels.

Armour protection followed contemporary standards, with an 11-inch main belt and three-inch deck armour, providing reasonable defence against naval artillery of the time. Six ships of this class were ordered of this class, *Connecticut*, *Louisiana*, *Kansas*, *Minnesota*, *Vermont*, and *New Hampshire*, all serving as flagships in various capacities. Though soon outclassed by the revolutionary HMS Dreadnought in 1906, the Connecticut class marked the peak of US pre-dreadnought design.

USS CONNECTICUT (BB-18)

BUILDER New York Navy Yard

DISPLACEMENT 17,949 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 7-inch (178mm), 20 x 3-inch (76mm), 12 x 3 pounders, 4 x 1 pounder, 4 x 21-inch (535mm) torpedo tubes

COMPLETED 29 September 1906

FATE Sold for scrap 1 November 1923

The first of the new class of battleship was named USS Connecticut and construction was undertaken by the New York Navy Yard. The first steel was laid on 10 March 1903 and

the ship was launched on 29 September 1904, before being commissioned into the US Navy on 29 September 1906 under the command of Captain William Swift. The construction work had been delayed by both industrial action at the shipyard and several sabotage attempts.

Soon after her commissioning, USS Connecticut became one of the 16 battleships which formed the Great White Fleet and circumnavigated the world between 1907 and 1909 for which she was painted bright white. The deployment did not start

well for Connecticut when, on 13 January 1907, she ran aground in Puerto Rico, after which Captain Swift was found guilty of negligence at a court martial.

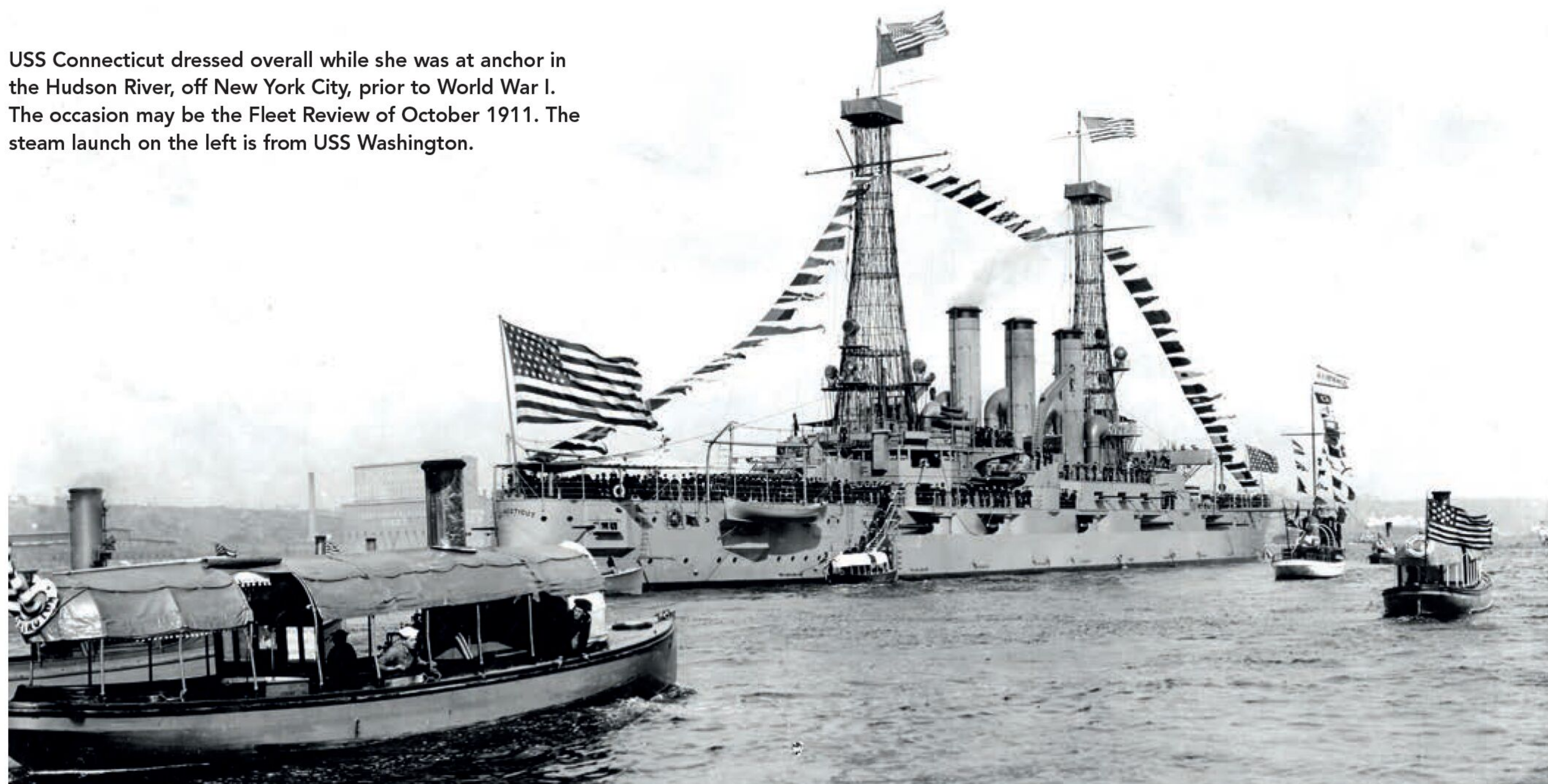
Following the completion of the Great White Fleet's tour, which included visits to South American ports and humanitarian relief in Italy following devastating earthquakes, the battleship served as flagship of the Atlantic Fleet until 1915, when she was placed in the Atlantic Reserve Fleet.

While America was still not at war with Germany, preparedness

in the US was enhanced and in 1916 USS Connecticut was recommissioned. She went on to serve mostly in a training role, but from April 1917 undertook a more active role transporting troops and escorting convoys to and from Europe.

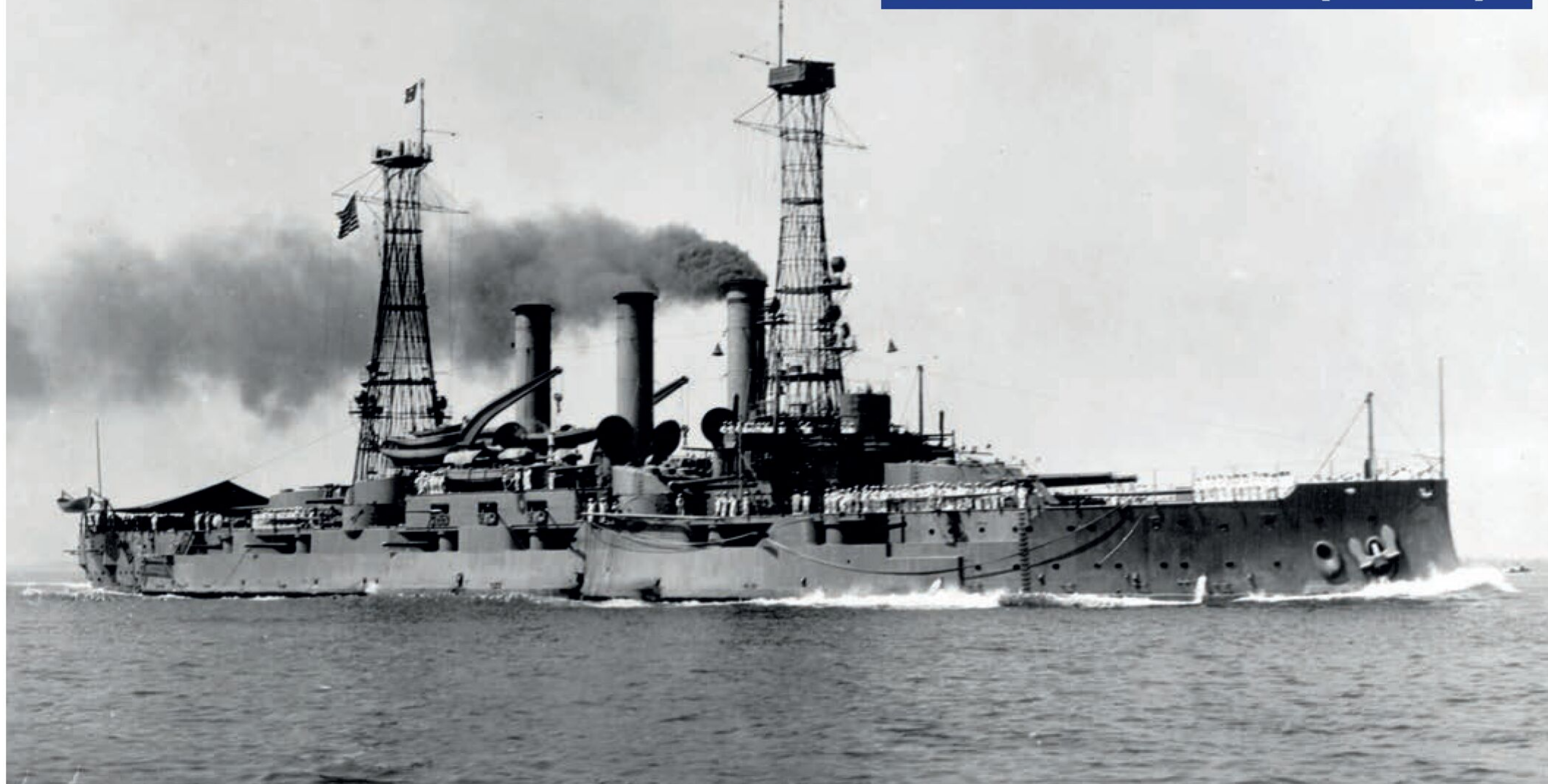
In 1922, adhering to the Five Power Treaty, she made her final voyage to Puget Sound Navy Yard where she was decommissioned on 1 March 1923 after 17 years of service. She was sold for breaking up by Walter R Johnson of San Francisco on 10 November 1923.

USS Connecticut dressed overall while she was at anchor in the Hudson River, off New York City, prior to World War I. The occasion may be the Fleet Review of October 1911. The steam launch on the left is from USS Washington.



USS Louisiana (BB-19) under way, circa 1910. She primarily operated along the US east coast and in the Caribbean during her career.

USS LOUISIANA (BB-19)



BUILDER Newport News Shipbuilding and Drydock Co

DISPLACEMENT 17,949 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 7-inch (178mm), 20 x 3-inch (76mm), 12 x 3 pounders, 4 x 1 pounder, 4 x 21-inch (535mm) torpedo tubes

COMPLETED 2 June 1906

FATE Scrapped 1923

USS Louisiana was the third ship of the name to serve in the US Navy. Built by the Newport News Shipbuilding and Drydock Company from 7 February 1903, she was commissioned on 2 June 1906. She was powered by triple-expansion steam engines producing 16,500shp giving a top speed of 18 knots. Like her sisters, she formed part of the Great White Fleet which circumnavigated the globe between 1907 and 1909. She was also involved in protecting American interests during the Mexican Revolution, when she fired her main guns at Mexican troops.

Louisiana was involved in American efforts to assist in Cuba following a request by Cuban President Tomás Estrada

Palma for help in suppressing an insurrection in the country in 1906. Later, she carried US President Theodore Roosevelt to Panama to witness progress on the construction of the canal.

Between 1910 and 1923 the battleship travelled extensively around the world, visiting ports

as far afield as Germany, Sweden, Russia and Mexico. During gunnery training on 6 April 1917 a tragic accident occurred when a seven-inch shell from USS New Hampshire hit USS Louisiana, which resulted in one man being killed and several others being injured.

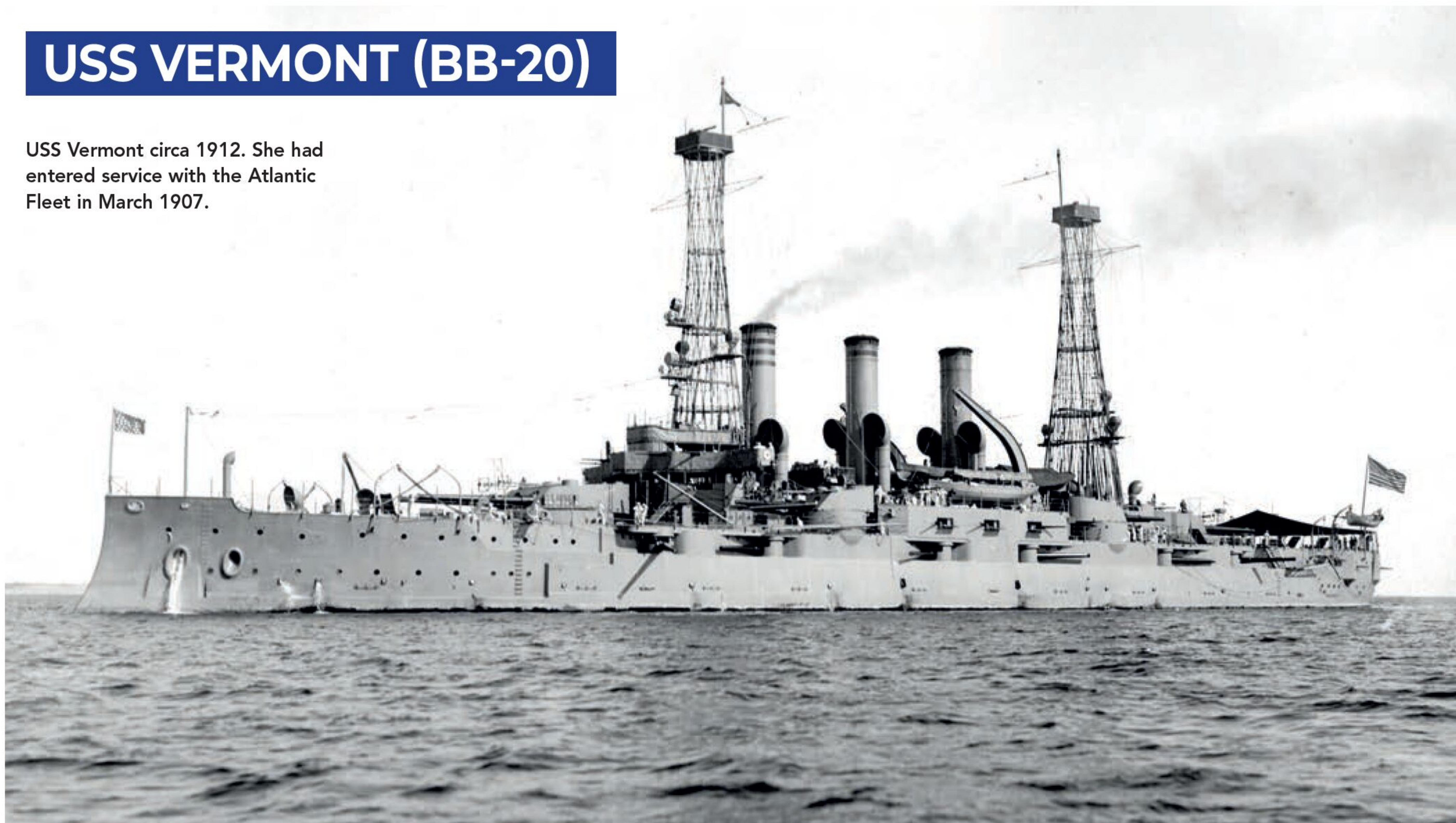
During World War I USS Louisiana served as a training ship and a transport for troops returning to the United States from Europe. Louisiana was decommissioned on 20 October 1920 and sold for scrap three years later, in November 1923, to the Philadelphia Navy Yard.



USS Louisiana off Coronado, California, on 14 April 1908, during the Great White Fleet's visit to the west coast. Note the illuminated ship's name displayed on the bridge.

USS VERMONT (BB-20)

USS Vermont circa 1912. She had entered service with the Atlantic Fleet in March 1907.



BUILDER Fore River Shipyard

DISPLACEMENT 17,949 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 7-inch (178mm), 20 x 3-inch (76mm), 12 x 3 pounders, 4 x 1 pounder, 4 x 21-inch (535mm) torpedo tubes

COMPLETED 4 March 1907

FATE Scrapped November 1923

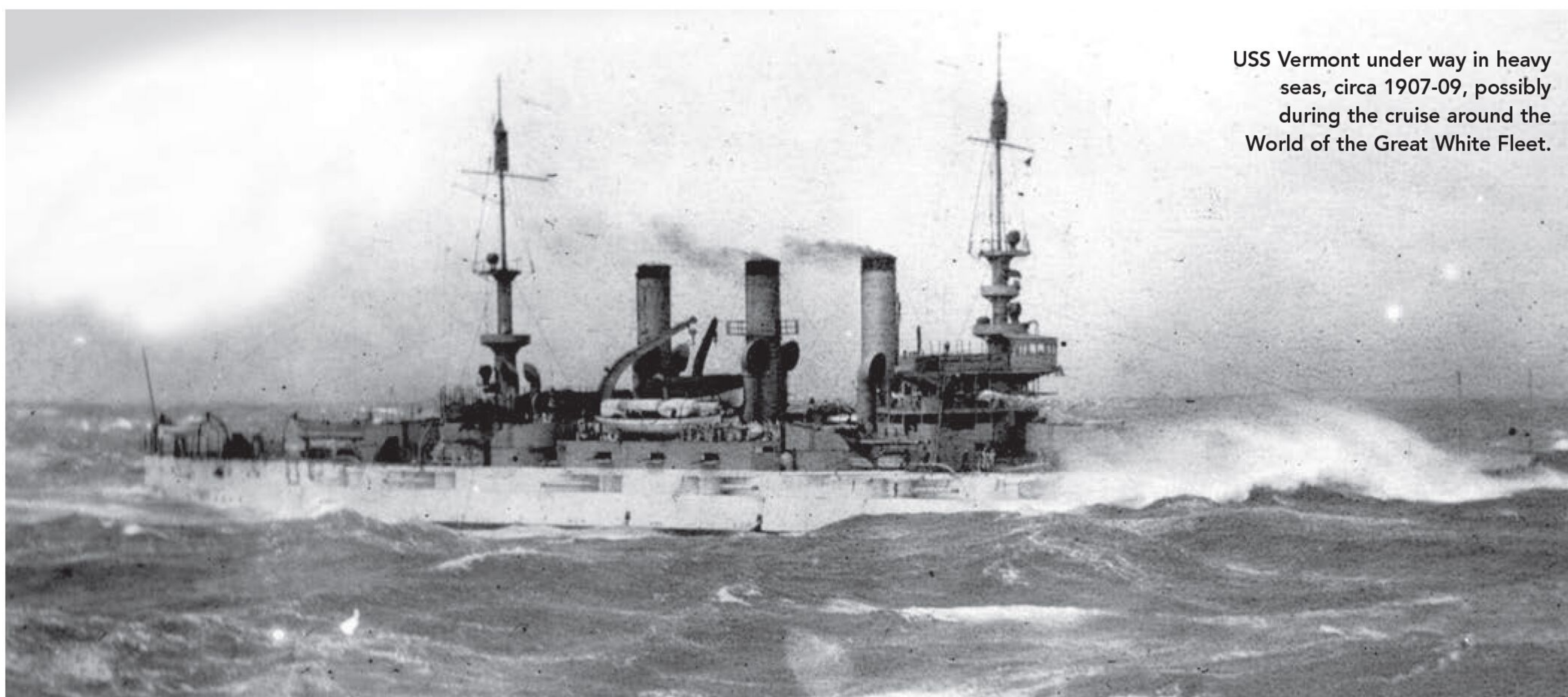
.....
USS Vermont's construction started on 21 May 1904. The build was swift, and the

ship was launched on 31 August 1905 at the shipyard of Fore River Shipyard at Quincy, Massachusetts. Measuring 139.1m in length, she was powered by twin screws each driven by a triple expansion steam engine producing 16,500shp, enabling a top speed of 18 knots. After final fitting out, she was commissioned into the US Navy on 4 March 1907 in time to join the Great White Fleet on their epic journey around the world.

Between 1910 and 1913 the battleship frequently travelled as far as the Mediterranean, Caribbean and South America, but it was to central America that she was dispatched during the Mexican Revolution. USS Vermont, along with many of her sisters, played a crucial role in the occupation of Veracruz.

She operated as a training ship during World War I, a role she continued into the post-war era. On 28 May 1918 she

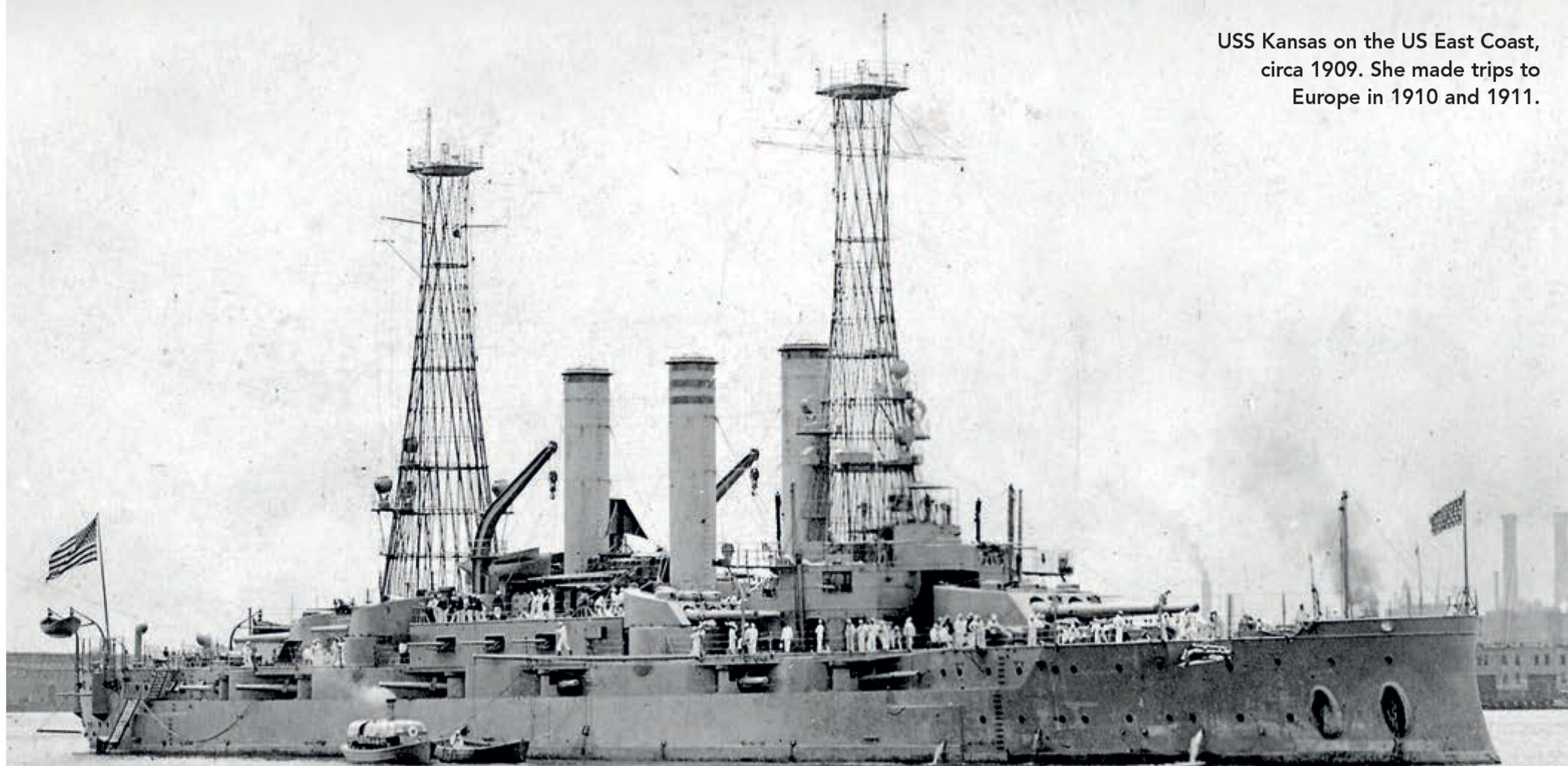
carried the body of the Chilean Ambassador to the United States home to Chile, before being used to transport around 5,000 US service personnel home from Europe at the end of the war. Due to the signing of the Washington Naval Treaty, her career was cut short, and she was decommissioned on 30 June 1920. Three years later the inactive hulk was sold for breaking up, which commenced in November 1923.



USS Vermont under way in heavy seas, circa 1907-09, possibly during the cruise around the World of the Great White Fleet.

USS KANSAS (BB-21)

USS Kansas on the US East Coast, circa 1909. She made trips to Europe in 1910 and 1911.



BUILDER New York Shipbuilding

DISPLACEMENT 17,949 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 7-inch (178mm), 20 x 3-inch (76mm), 12 x 3 pounders, 4 x 1 pounder, 4 x 21-inch (535mm) torpedo tubes

COMPLETED 18 April 1907

FATE Scrapped 1924

On 10 February 1904 shipyard workers at New York Shipbuilding Co in Camden, New Jersey watched with pride as the battleship they had worked on for 18 months was launched in the Delaware River. This vessel, USS Kansas (BB-21), measured 139.1m (456ft) in length, with a beam of 23.4m (77ft) and a draught of 7.5m (24ft 6in). She was slightly larger than her Virginia class predecessors.

Propulsion was provided by twin screws each driven by a triple expansion steam engine, developing a total of 16,500shp and supplied with steam by 12 coal-fired boilers. This arrangement gave Kansas a top

speed of 18 knots, which was respectable for her era but soon rendered obsolete by turbine-powered dreadnoughts.

Her armament reflected the mixed-calibre philosophy of pre-dreadnought design. The main battery consisted of four 12-inch/45 calibre guns in two twin turrets, fore and aft. The secondary battery was unusually heavy: eight eight-inch guns, 12 seven-inch guns, and ten three-inch guns, supplemented by four submerged 21-inch torpedo tubes. Armour protection was robust for the time, with an 11-inch belt, nine-inch turret faces, and three-inch deck armour.

Commissioned on 18 April 1907, Kansas entered service already overshadowed by the revolutionary HMS Dreadnought, which had been launched in 1906. Despite this, she played a prominent role in the Great White Fleet between 1907 and 1909, sailing alongside her sisterships painted in striking white and buff. After returning home, Kansas undertook

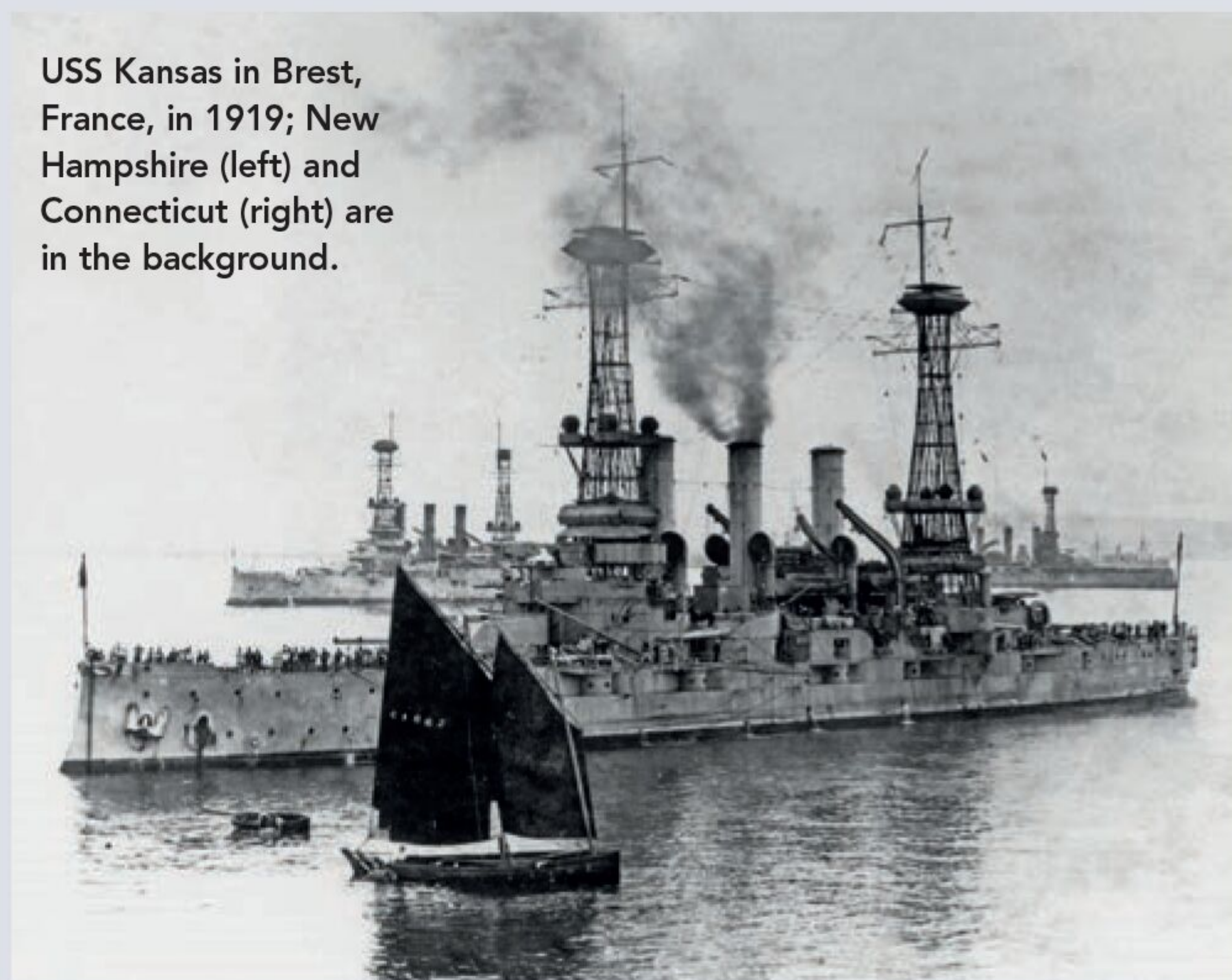
European visits in 1910 and 1911, then shifted to regional duties, acting as a stabilising presence during political unrest in Mexico and Central America.

During World War I, Kansas served primarily as a training ship, preparing thousands of sailors for wartime service. Later, she escorted convoys across the Atlantic and, following the Armistice, made several voyages

from Brest, France, repatriating American troops.

Her outdated design and coal-fired boilers made her an ideal candidate for early retirement under the Washington Naval Treaty of 1922. After a brief period as a cadet training ship and as flagship of Battleship Division Four, she was decommissioned on 16 December 1921 and sold for scrap in 1924.

USS Kansas in Brest, France, in 1919; New Hampshire (left) and Connecticut (right) are in the background.



USS MINNESOTA (BB-22)

BUILDER: Newport News Shipbuilding and Dry Dock Co

DISPLACEMENT 17,949 tons full load

ARMAMENT 4 x 12 inch (305mm), 8 x 8-inch (203mm), 12 x 7-inch (178mm), 20 x 3-inch (76mm), 12 x 3 pounders, 4 x 1 pounder, 4 x 21-inch (535mm) torpedo tubes

COMPLETED 9 March 1907

FATE Scrapped 1924

USS Minnesota had a colourful career in the US Navy. Her construction started on 27 October 1903 and and

she was launched on 8 April 1905. After commissioning into service on 9 March 1907, she immediately joined the Great White Fleet travelling the world. However, Minnesota had been commissioned just four months before the Royal Navy's revolutionary HMS Dreadnought was launched, which effectively rendered her obsolete.

But Minnesota and her sisters remained in service, and over the course of the next decade she supported American interests during the Mexican Revolution,

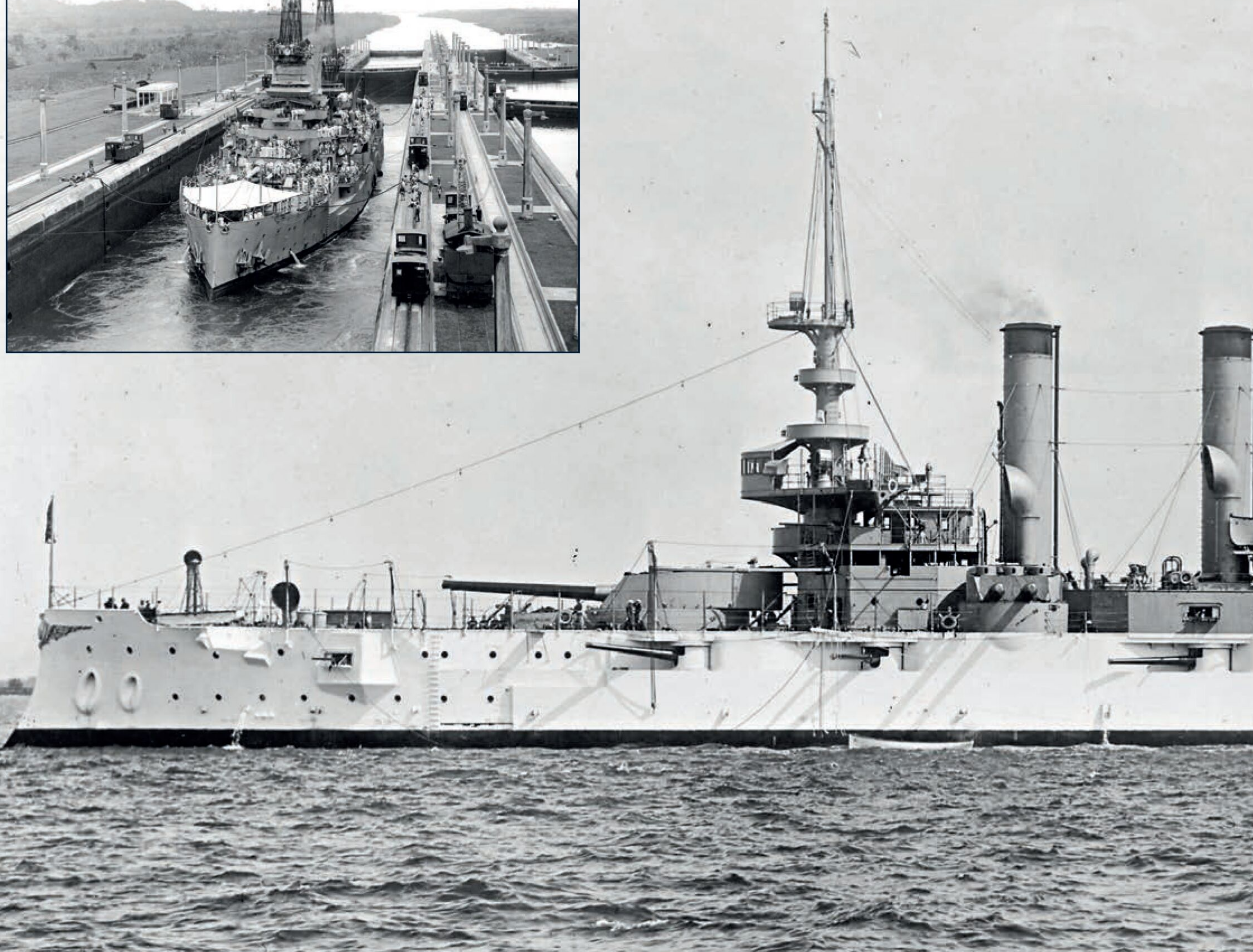
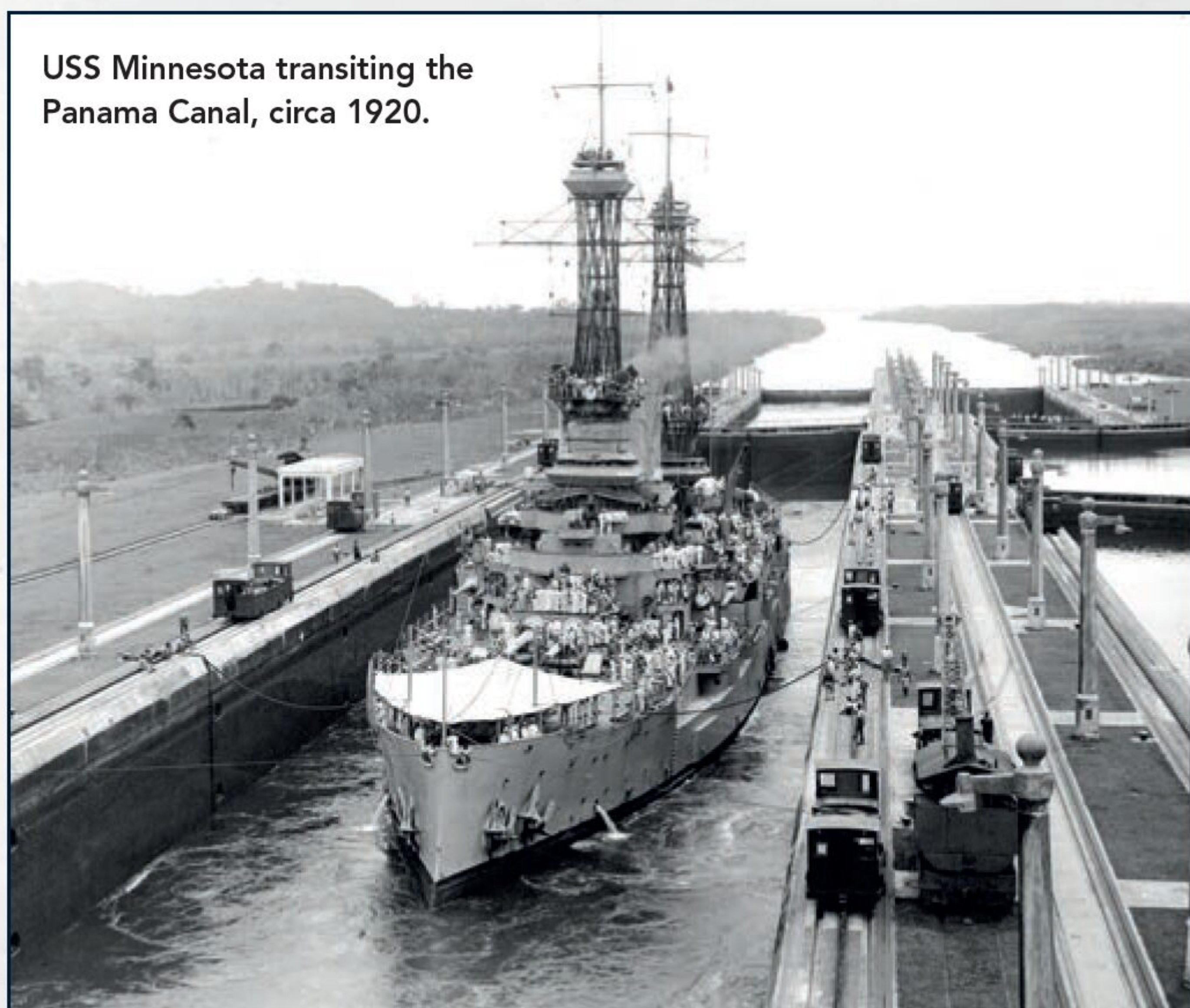
in the Pacific, Mediterranean and the Caribbean. Following America's entry into World War I the battleship initially served as a training ship for new recruits before sailing to join fellow American and British battleships that were attached to the British Grand Fleet.

During one sortie, on 29 September 1918, USS Minnesota struck a sea mine laid by German U-boat U-117 off Fenwick Island, Delaware. The explosion ripped a hole in the battleship's side and severely damaging the ship. Rudimentary repairs were made and she

sailed to Philadelphia Navy Yard, where more permanent repairs were made over the course of the next five months.

By this time the war had reached its conclusion and the only task left was the repatriation of US troops from the French port of Brest to the United States, a role that USS Minnesota undertook three times. On completion of this work, she resumed her training role with summer cruises during 1920 and 1921. On 1 December 1921 USS Minnesota was decommissioned and in January 1924 was sold for scrap.

USS Minnesota transiting the Panama Canal, circa 1920.





▲ Part of the Rainbow Division (42nd Division, US Army) on board USS Minnesota on the homeward voyage from France to New York, 1919.



USS Minnesota at the Philadelphia Navy Yard, circa 1919; she was the first ship in the US Navy named in honour of the 32nd state.

▼ USS Minnesota pictured around 1907-08 during her time with the Great White Fleet.



USS NEW HAMPSHIRE (BB-25)

BUILDER New York Shipbuilding Corporation

DISPLACEMENT 17,949 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 12 x 7-inch (178mm), 20 x 3-inch (76mm), 12 x 3 pounders, 4 x 1 pounder, 4 x 21-inch (535mm) torpedo tubes

COMPLETED 18 March 1908

FATE Scrapped November 1923

The second US warship to bear the name, USS New Hampshire was built by the New York Shipbuilding Corporation in Camden, New Jersey. Construction began on 1 May 1905 and she was launched on 30 June 1906. After fitting out and initial builder's sea trials, the battleship was commissioned into the US Navy on 19 March 1908 under the command of Captain Cameron M. Winslow.

One of New Hampshire's first duties was the transportation of a Marine Expeditionary Regiment to Colón, Panama, after which

she headed north for a visit to Canada and the city of Quebec, after transiting the St Lawrence River. This was followed by visits to Portsmouth, New York and Bridgeport. In early 1909 she was in the Caribbean and in February attended a large naval review at Hampton Roads, attended by President Theodore Roosevelt to welcome home the Great White Fleet from its circumnavigation.

Over the next 18 months the battleship exercised along the US eastern seaboard and in the Caribbean, and crossed the Atlantic for visits to European ports including Cherbourg. This was repeated in 1911, when she also visited Scandinavian, Russian and German ports, returning home in July.

Just before the start of World War I in Europe, and with America remaining neutral, USS New Hampshire was dispatched to patrol off Hispaniola and the Mexican Coast. At the latter she participated in the occupation of

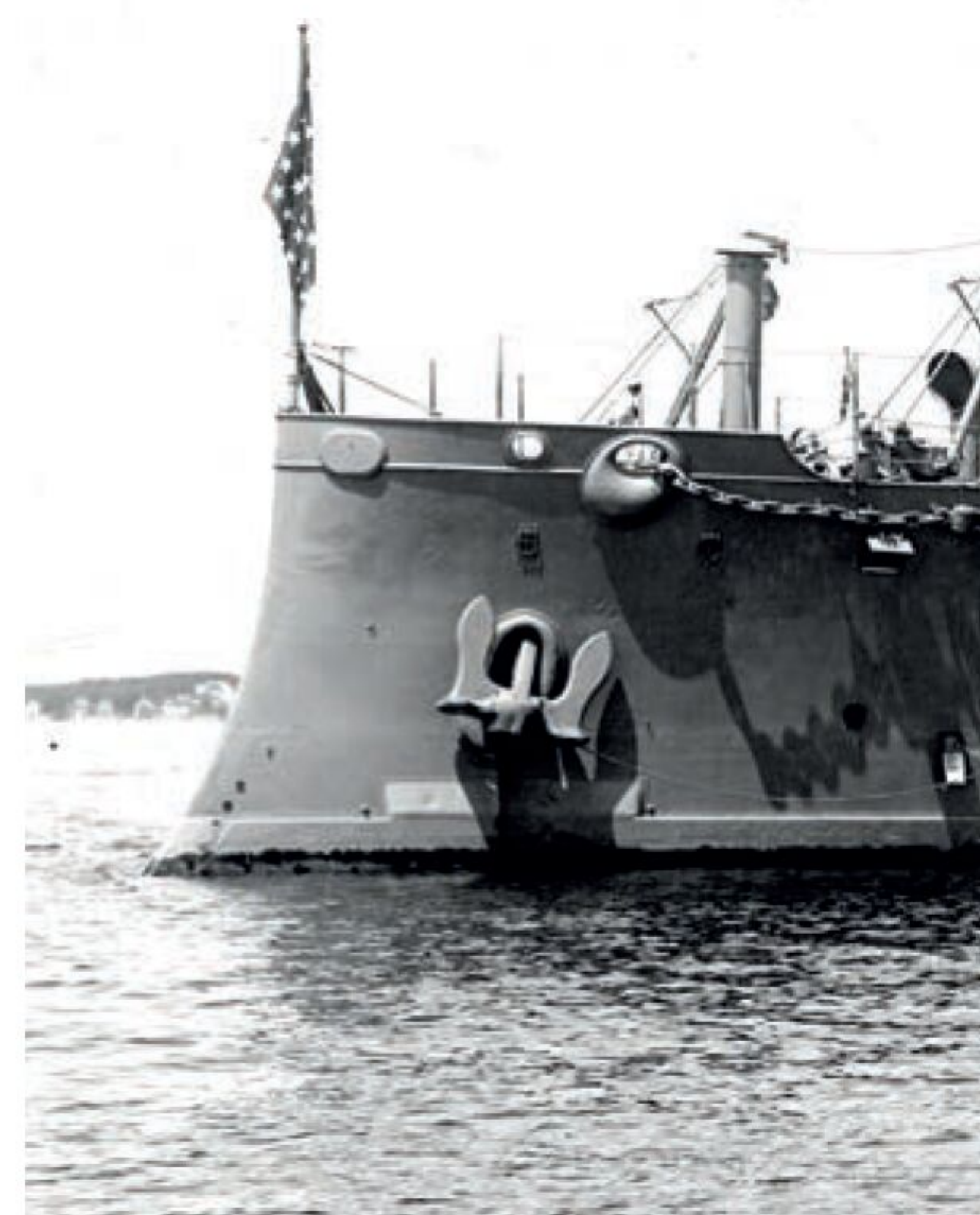
Veracruz in April 1914 and did so again in August 1915.

When America joined the fighting in Europe, USS New Hampshire's initial role was in the training of new engineers and gunners in Northern coastal waters before escorting convoys to and from Europe. In June 1919 she completed four separate journeys from France, bringing soldiers back home.

In 1920 she was refitted at Philadelphia before departing on a cruise in the Pacific via the Panama Canal, after which she called at Hawaii. Back in the North Atlantic later in the year, she crossed to Europe and visited Sweden, Kiel and Gravesend on the Thames.

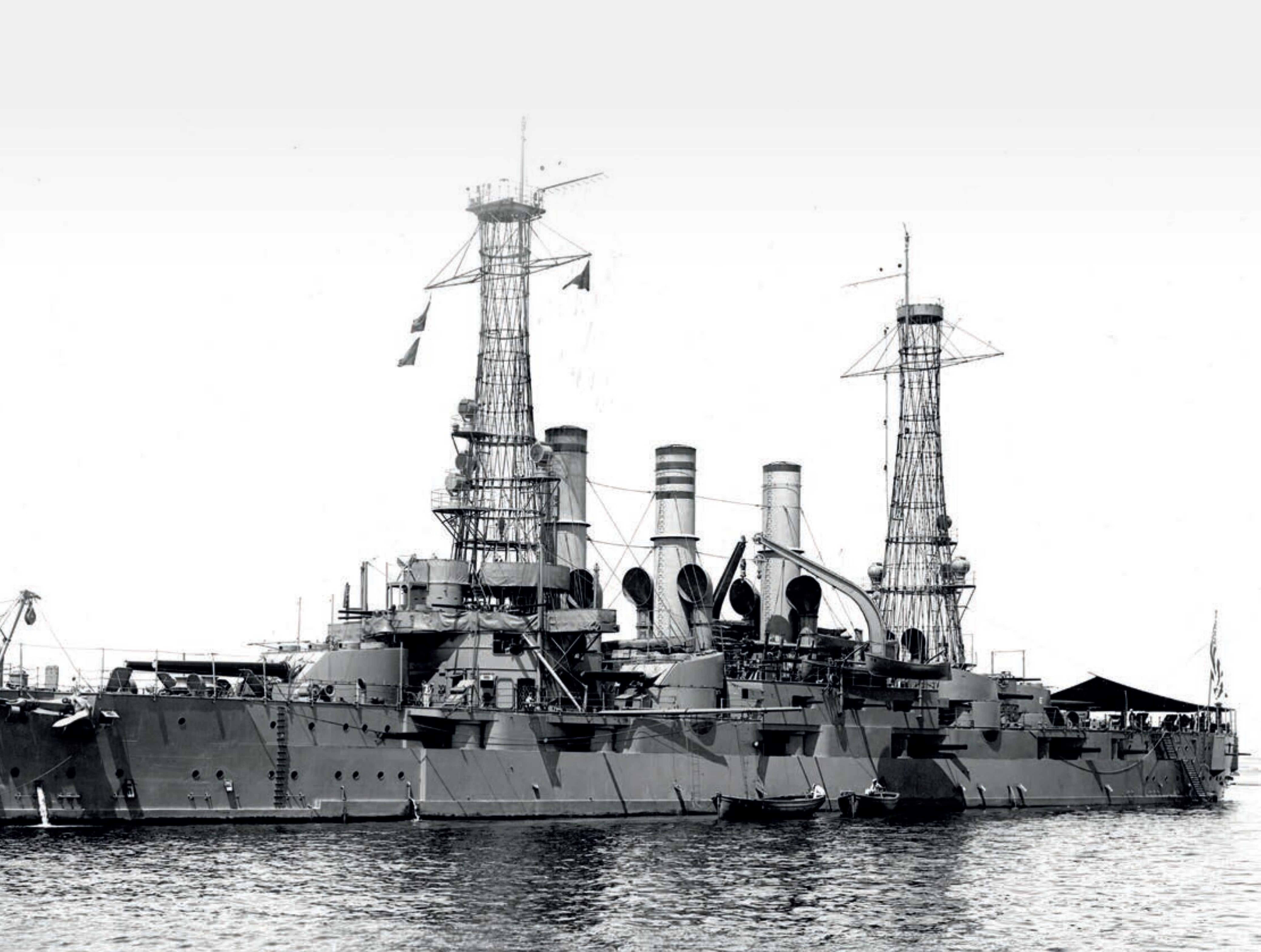
Soon after her return to the US in late 1920, she was decommissioned on 21 May 1921 at Philadelphia and sold to scrap merchants. She was towed away for demolition in November 1923 in accordance with the terms of the Washington Naval Treaty.

USS New Hampshire in harbour, circa 1910. In late 1910 her appearance was altered by the installation of a pair of 'cage' masts.

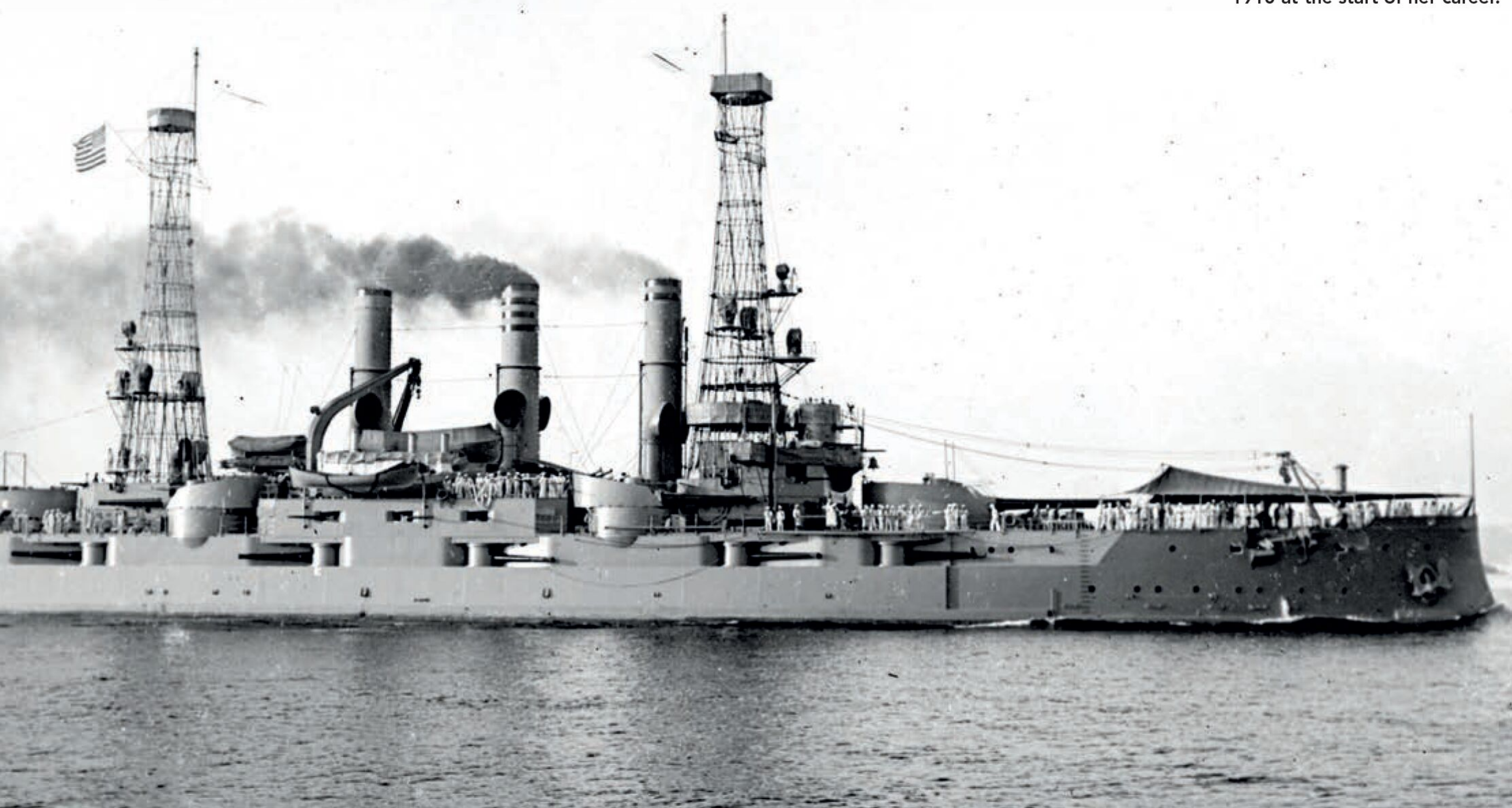


USS New Hampshire's bow decoration while the battleship was in drydock at the New York Navy Yard, Brooklyn, New York, 6 January 1909.





USS New Hampshire on 29 July
1910 at the start of her career.



7 MISSISSIPPI CLASS

The Mississippi class represented the final iteration of the pre-Dreadnought designs of American battleships, and they serve as more a footnote in the history of the type than anything else, as their service was neither long nor spectacular. They were built belatedly and with numerous cost-cutting measures incorporated into the design which severely compromised their effectiveness and usefulness.

The ships were a product of political manoeuvring in order to receive funding and they were built to a design limited by tonnage restrictions, and the hulls were completed with a very limited budget. The two ships had a low freeboard, less powerful engines giving a speed of just 17 knots and less firepower. The reduction in length, engine size and fuel capacity caused them to be slow and short-ranged.

Other design compromises caused them to perform poorly in terms of steering, stability, and sea keeping.

These unsatisfactory characteristics marked USS *Mississippi* and USS *Idaho* out as candidates for early withdrawal from service with the US Navy. They were sold to Greece, where they enjoyed lengthy careers as *Kilkis* and *Lemnos*, until being destroyed during World War II.

USS MISSISSIPPI (BB-23)

BUILDER: William Cramp

DISPLACEMENT 14,697 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 8 x 7-inch (178mm), 12 x 3-inch (76mm), 6 x 3-pounders, 2 x 1-pounders, 2 x 21-inch (533mm) torpedo tubes

COMPLETED 1 February 1908

FATE Sold to Greece 1914, sunk 23 April 1941

USS Mississippi, the inaugural vessel of her class, was built by the William Cramp Shipyard between 1904 and 1908. She was built to a reduced standard by order of Congress, who were unwilling to fund two full battleships and consequently a series of cost-cutting measures were imposed so the ships came in at or under budget. The result was a compromised design that was inferior to all other

naval ships. In every aspect USS Mississippi was second rate, with armour plating being thinner, engines less powerful, speed slower and her accommodation for the crew to a lower standard than was expected at the time.

She entered service on 1 February 1908. Between 1909 and 1912 she served with the Atlantic Fleet, mostly on routine training operations, but in 1910 she crossed the Atlantic and toured European ports. In 1912 she transported the US Marine Corps to Cuba during a period of civil unrest on the island, but this proved to be the last significant action of her career with the US Navy as she was deemed unsuitable for further service and allocated to the reserve fleet in the same year.

As construction of the ship represented a large investment

in time and money, Congress and the US Navy wanted to see what other uses the hull could be put to, and after two years of inactivity Mississippi was reactivated in the role of aviation support ship at Naval Air Station Pensacola in Florida. In this capacity she supported flying boat operations during the American occupation of Veracruz in Mexico in July 1914.

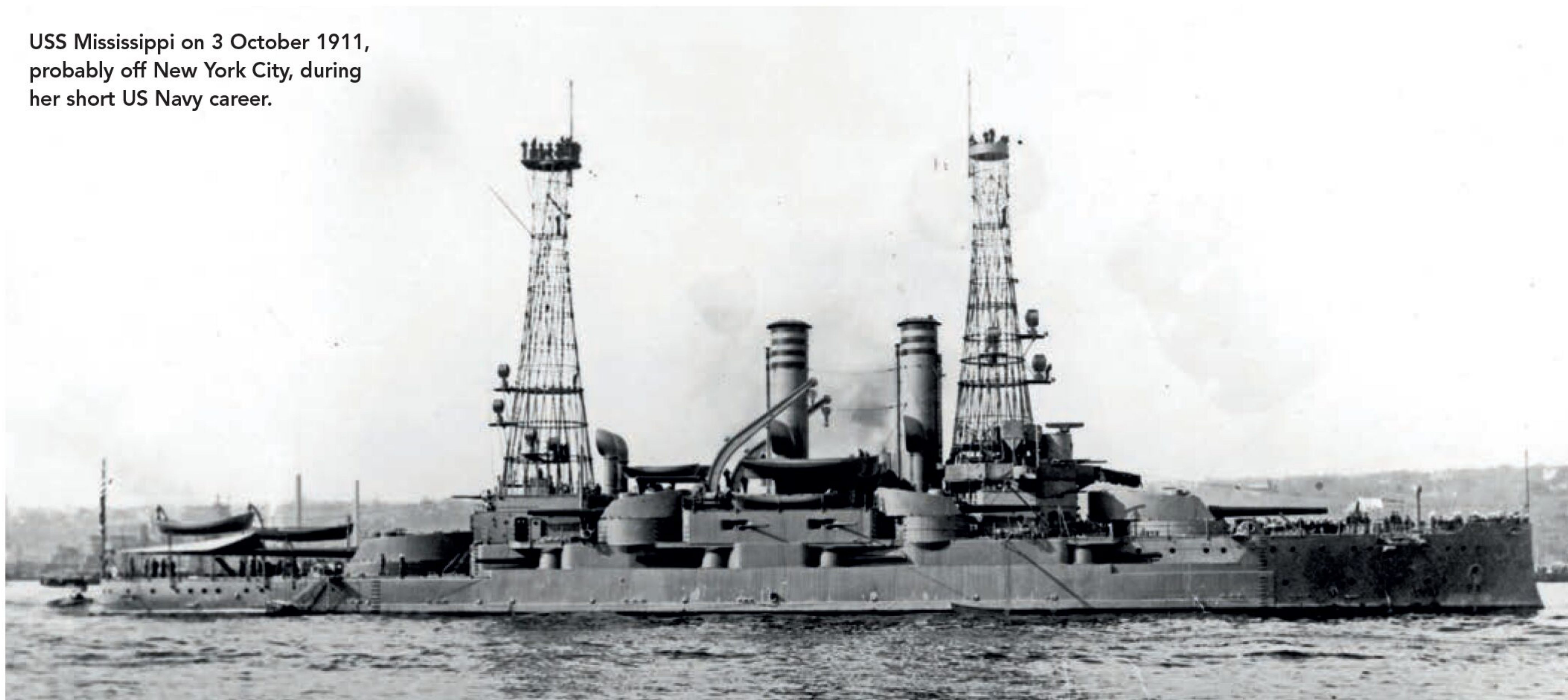
This was a short revival in US Navy service as later in 1914 the Greek government purchased the ship and put her into service as the flagship of the Hellenic Navy, for which she was renamed *Kilkis*. She saw no action during World War I as Greece remained neutral until 1917, but post-war *Kilkis* served as a harbour defence ship and saw action during the Allied intervention in the Russian Civil War and the Greco-Turkish War

of 1919-22. During this conflict *Kilkis* supported landings in Turkey and covered the final withdrawal of Greek forces in September 1922.

However, her lack of speed counted against the old battleship, and in 1930 *Kilkis* was replaced as flagship of the Hellenic Navy and put into reserve. During World War II she functioned as a training ship, but her end came when Germany invaded Greece in April 1941.

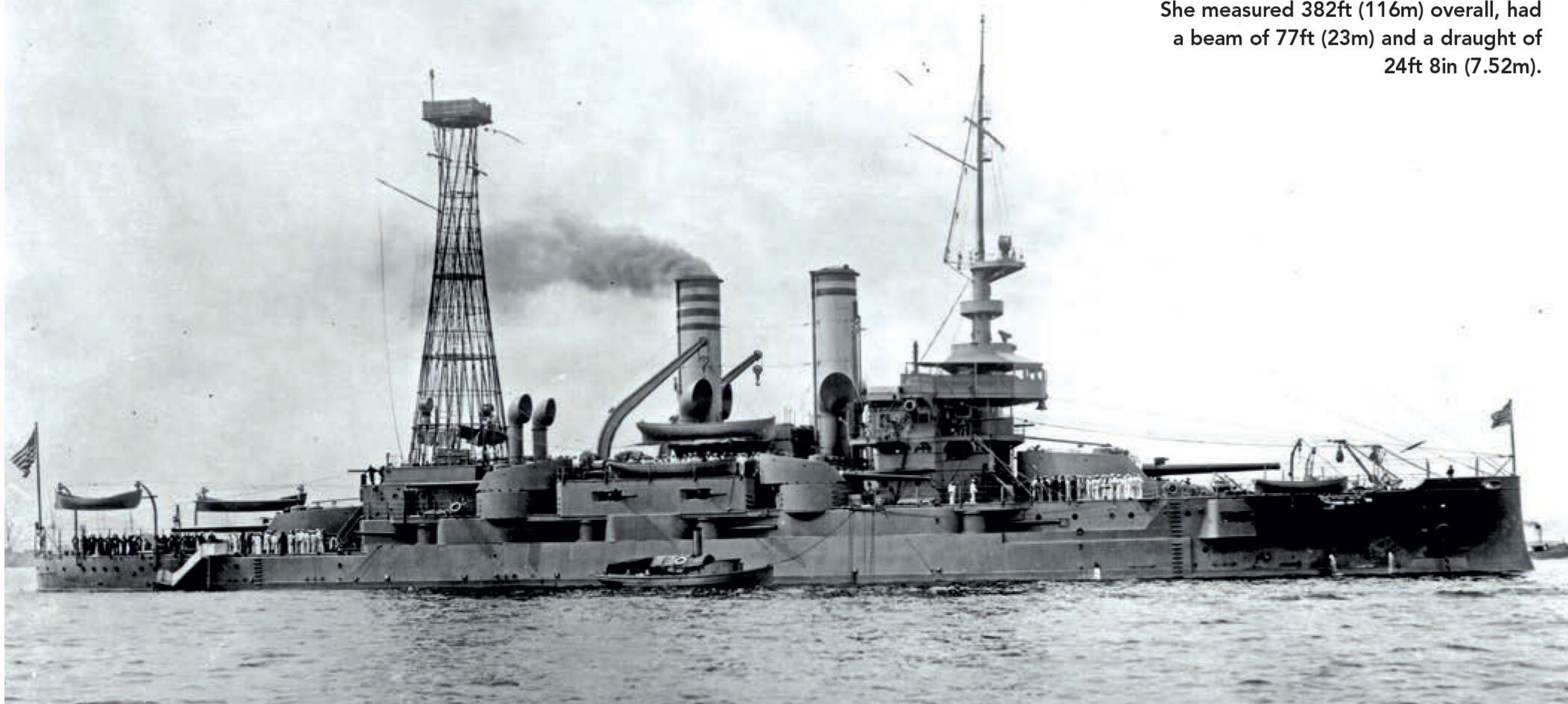
On 23 April 1941 a German Luftwaffe Ju 87 Stuka dive bomber targeted *Kilkis* when she was alongside at Salamis Naval Base, next to her sistership *Lemnos*. *Kilkis* attempted to get under way to evade the attacks, but was hit by several bombs and sank in the harbour. After the war both ships were raised and scrapped locally.

USS Mississippi on 3 October 1911, probably off New York City, during her short US Navy career.



USS IDAHO (BB-24)

USS Idaho was the second of two Mississippi class battleships ordered under the terms of the 1903 Naval Appropriation Bill. She measured 382ft (116m) overall, had a beam of 77ft (23m) and a draught of 24ft 8in (7.52m).



BUILDER William Cramp

DISPLACEMENT 14,697 tons full load

ARMAMENT 4 x 12-inch (305mm), 8 x 8-inch (203mm), 8 x 7-inch (178mm), 12 x 3-inch (76mm), 6 x 3-pounders, 2 x 1-pounder, 2 x 21-inch (533mm) torpedo tubes

COMPLETED 1 April 1908

FATE Sold to Greece 1914, sunk 23 April 1941 near Salamis

On 3 March 1903 approval was given to construct the second of the Mississippi class battleships, which was named USS Idaho, after the 43rd State of the Union. Her keel was laid on 12 May 1904 at the William Cramp and Sons shipyard in Philadelphia. On 12 May 1905 she was launched and commissioned on 1 April 1908 at the Philadelphia Navy Yard, under the command of Captain S.W.B. Deal.

Idaho was a second-rate battleship, and during her builder's and US Navy sea trials several deficiencies were identified. She was slow and rolled heavily in most sea states. In February 1909, after a visit to Cuba, she entered refit to try to rectify some of the faults. USS Idaho was not part of the Great White Fleet, but in February 1909 participated in the grand naval

review held in Hampton Roads to welcome back the ships that had sailed around the world.

In 1911 the battleship sailed up the Mississippi and visiting several inland ports in Louisiana before conducting exercises off Florida and in the Caribbean. Like her sister, she was deemed unsuitable for further service and was consigned to the reserve fleet in Philadelphia on 27 October 1913.

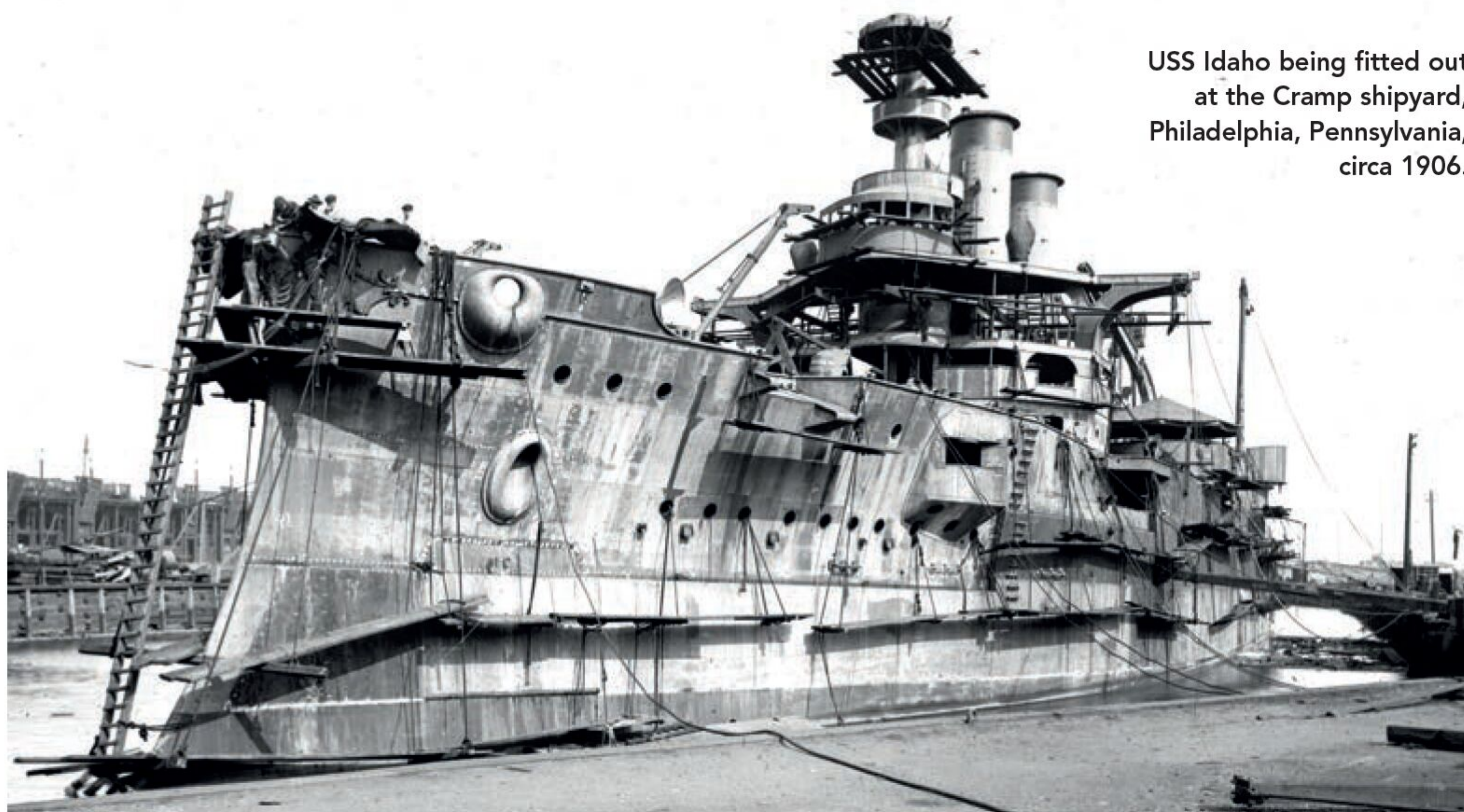
Eight months of inactivity followed until 9 May 1914, when she was briefly reactivated to serve in a training role for

midshipmen with a cruise to the Mediterranean. The cruise was a delivery voyage because she had been sold to Greece. On 17 July 1914 she arrived in Europe and was transferred to the Hellenic Navy 13 days later, being renamed Lemnos. The American delivery crew were transferred to USS Maine for the homeward passage.

In 1916, with World War I at its height, tensions between the neutral but German-leaning Greek state under King Constantine and France were strained. The French eventually

seized the Greek navy and Lemnos fell into disrepair. Post-war she was returned to service and joined Allied operations during the Russian Civil War and the Greco-Turkish War.

In 1922 Lemnos played a role in the evacuation of Smyrna and the September 11th Revolution. In 1932 she was put into reserve and lost her weapons in 1937 as she was used as a barracks ship. Lemnos was bombed with her sistership Kilis at Salamis Naval Base in 1941 and beached. She never returned to service and was scrapped after the war.



USS Idaho being fitted out at the Cramp shipyard, Philadelphia, Pennsylvania, circa 1906.

8 SOUTH CAROLINA CLASS

The South Carolina class occupies an often under-appreciated place in the evolution of the modern battleship. Had the South Carolina class been built sooner, the US Navy and not the Royal Navy would have claimed the distinction of having designed, built and put into service the first 'Dreadnought' type battleship as the South Carolinas preceded the British design by some months but not in build. In concept, the American ships were remarkably advanced, embracing the revolutionary

'all-big-gun' philosophy before HMS *Dreadnought* had been launched.

The class was hindered by a Congressional mandate to restrict their overall size to 16,000 tons, which impacted heavily on their speed and armament. This limitation forced designers to prioritise firepower and protection at the expense of propulsion, resulting in ships that were slower than their British counterparts and more reminiscent of the pre-dreadnought era. As a result, these limitations meant that the pair of

ships authorised, USS *South Carolina* and USS *Michigan*, had much more in common with the pre-dreadnoughts than the warships that followed them.

Despite these compromises, the class led the way with significant improvements in gunnery, having eight 12-inch guns in two pairs of turrets forward and aft. This arrangement, with the foremost and aftermost turrets having the gun barrels of their adjacent turrets above them, maximised firepower without increasing beam.

USS SOUTH CAROLINA (BB-26)

BUILDER William Cramp

DISPLACEMENT 17,617 tons full load

ARMAMENT 8 x 12-inch (305mm), 22 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

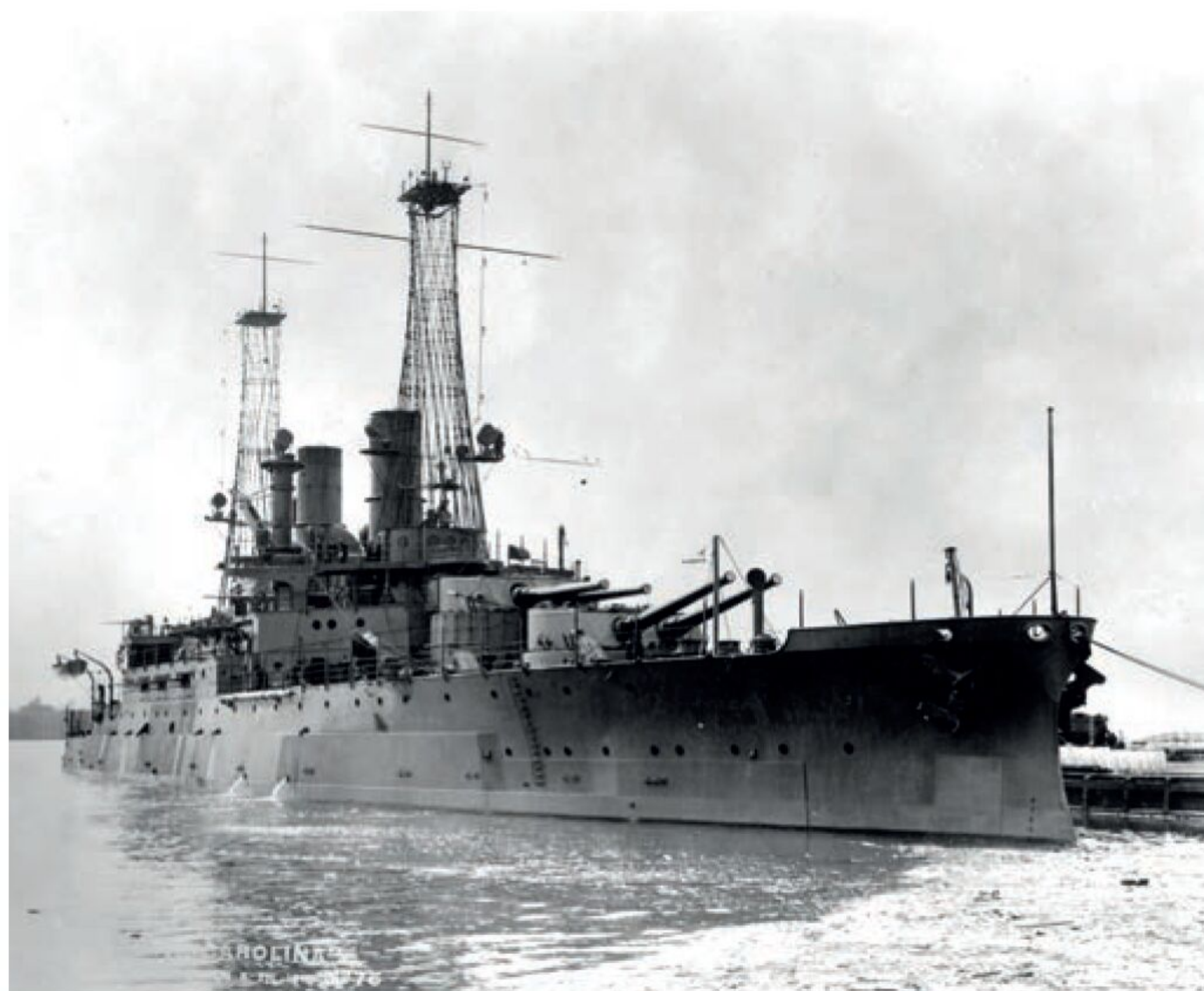
FATE Sold for breaking 1924

Work on USS South Carolina started when Chief Constructor of the Bureau of Construction and Repair, Admiral Washington L. Capps, chose a radical departure from previous battleship design and used a super-firing arrangement, which was later tested onboard the monitor USS Florida. The Cramp shipyard laid her keel on 18 December 1906. She was launched on 11 July 1908 and

completed and handed over to the US Navy on 1 March 1910.

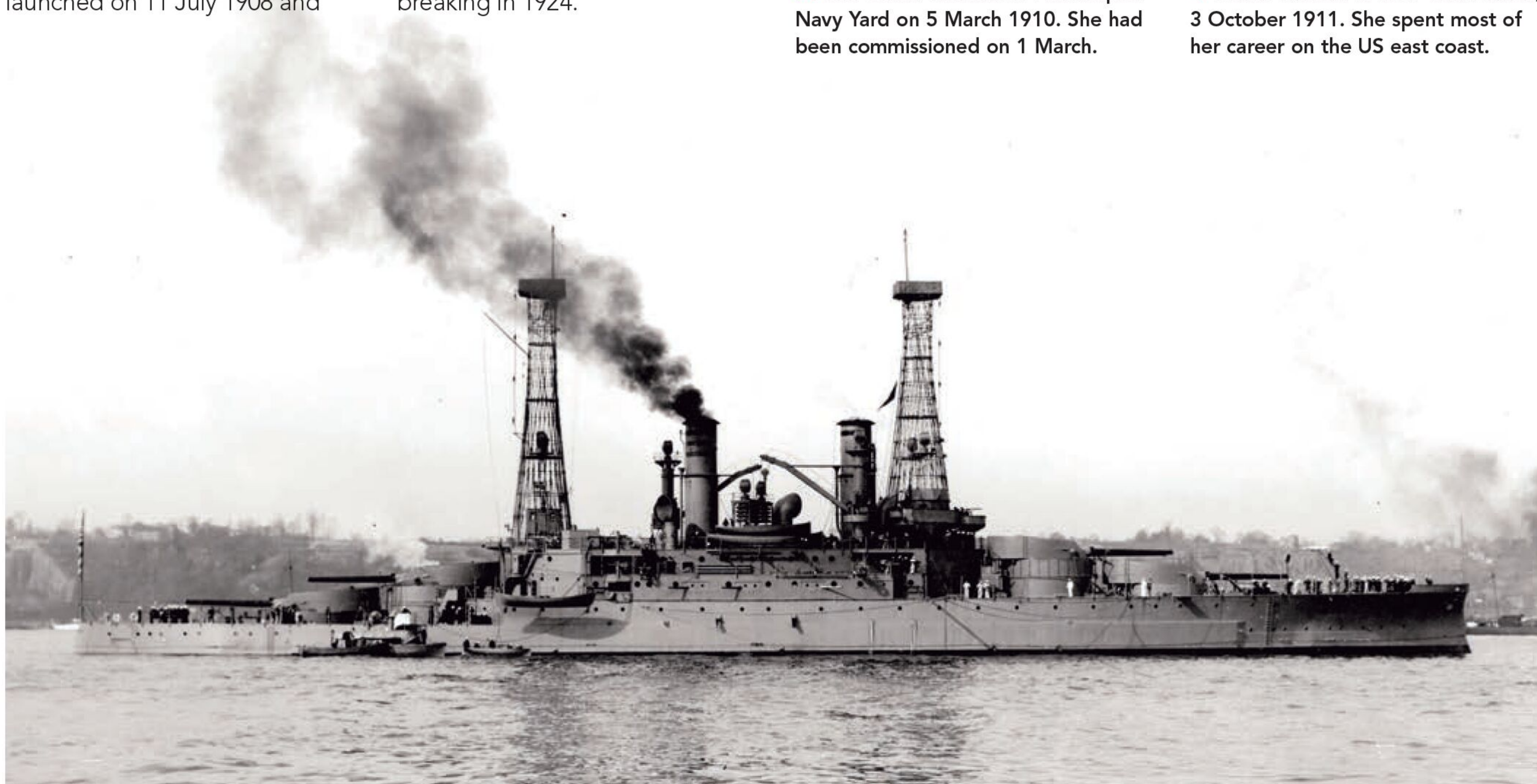
South Carolina and her sistership both saw service during the Veracruz incident in 1914. In service their limited speed and other aspects of their design limited their usefulness. During World War I neither South Carolina nor sistership USS Michigan was involved in the European fighting but they served as convoy escorts.

The ships tended to roll heavily which made them uncomfortable and inefficient fighting platforms. After the Washington Naval Treaty of 1921, South Carolina was one of the first battleships to be abandoned and was sold for breaking in 1924.



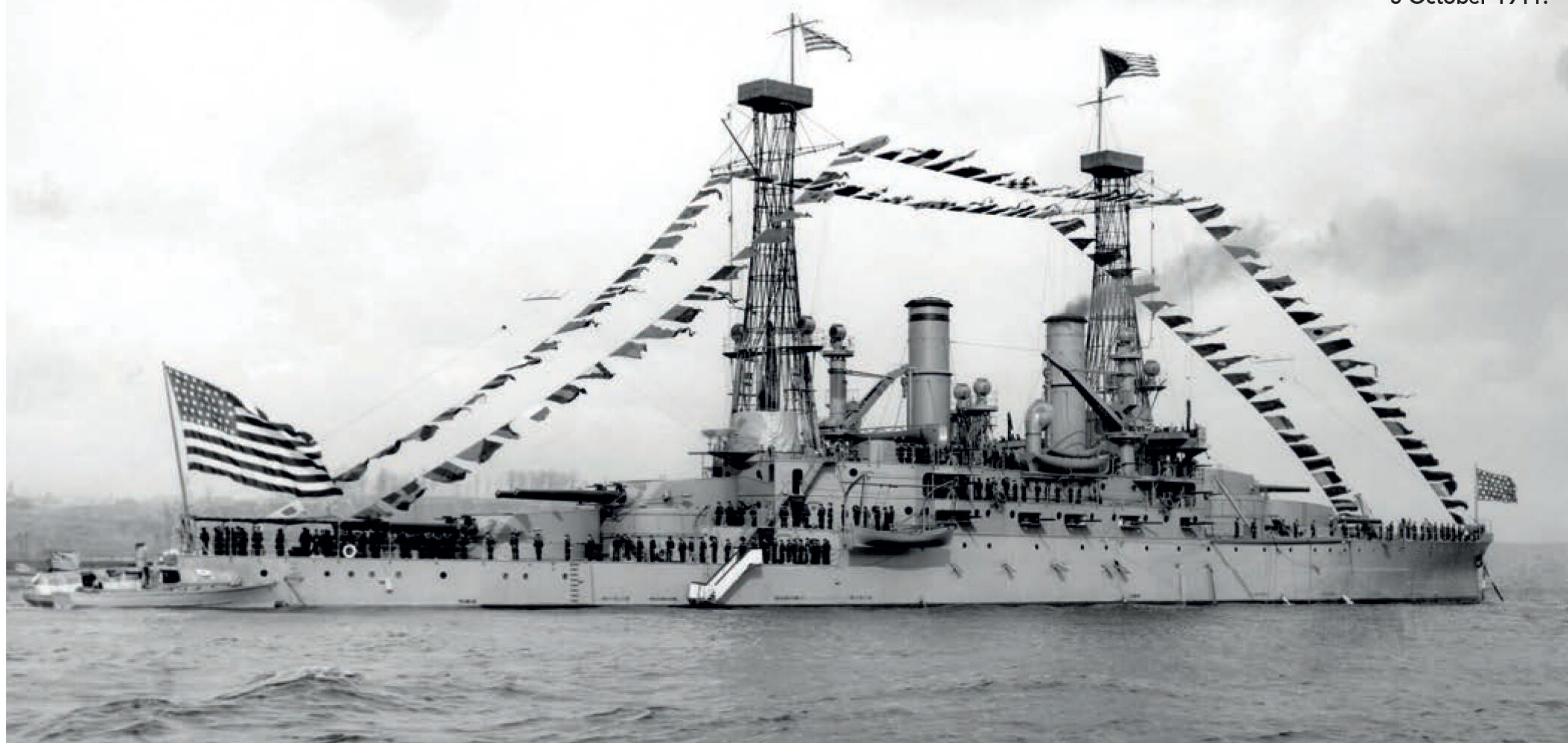
▲ USS South Carolina at Philadelphia Navy Yard on 5 March 1910. She had been commissioned on 1 March.

▼ South Carolina in New York Harbor, 3 October 1911. She spent most of her career on the US east coast.



USS MICHIGAN (BB-27)

USS Michigan dressed with flags and with her crew manning the rails for the naval review off New York City, 3 October 1911.



BUILDER New York Shipbuilding

DISPLACEMENT 17,617 tons full load

ARMAMENT 8 x 12-inch (305mm), 22 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 4 January 1910

FATE Sold for breaking up 1923

New York Shipbuilding was awarded the contract to build the second of the South Carolina class battleships, USS Michigan. Construction began when the keel was laid on 17 December 1906, and the hull was completed to launching stage faster than that of her sistership South Carolina, with Michigan entering the water two months earlier, on 26 May 1908. She was handed over to the US Navy on 4 January 1910.

Four years later, together with her sister, Michigan participated in the Veracruz incident between April and November 1914 when American forces occupied the port city of Veracruz. After the United States entered World War I in April 1917, Michigan was employed as a convoy escort and training ship for the rapidly expanding wartime navy. In 1918 Michigan suffered damage

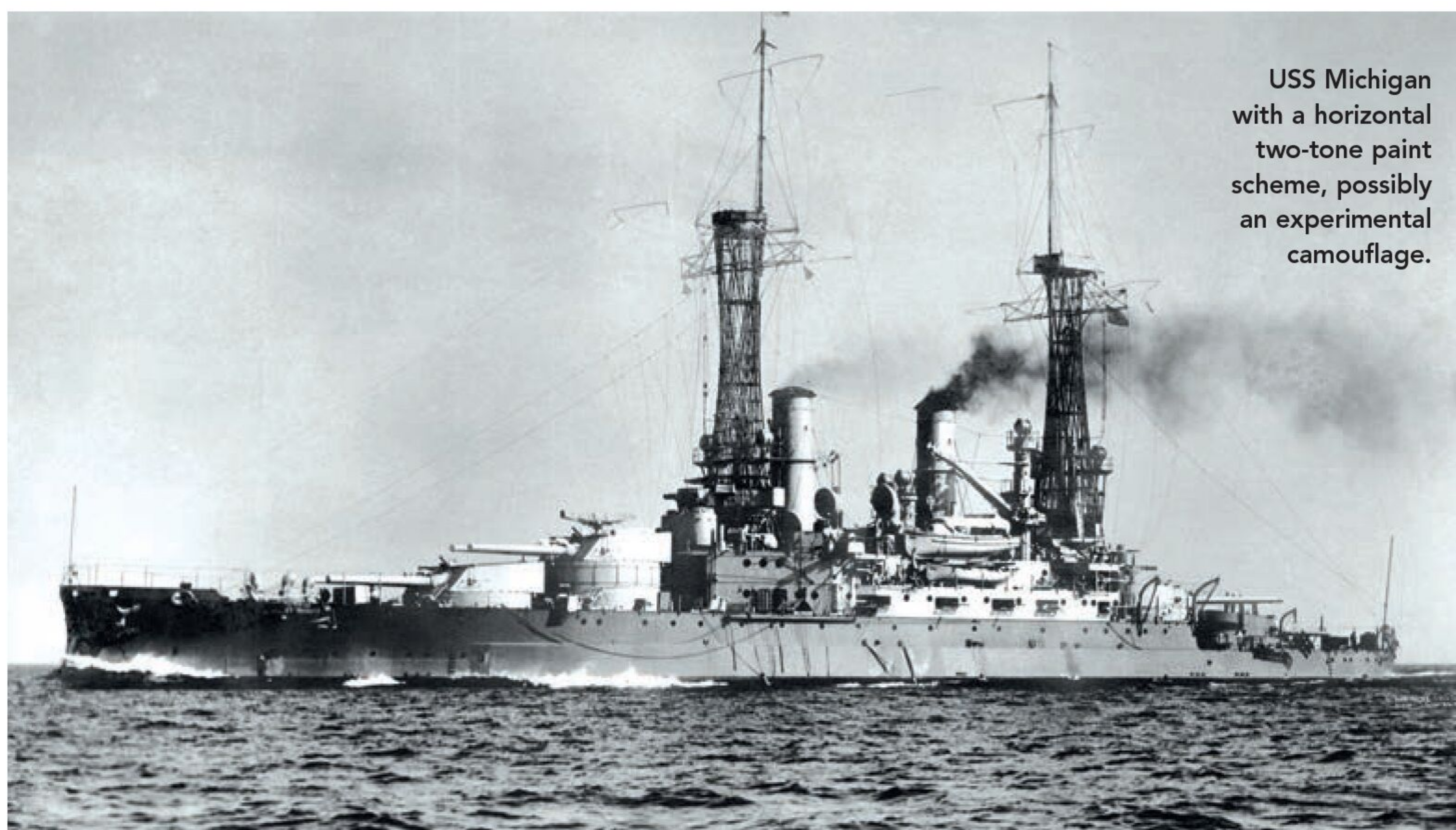
during a gale when her cage mast collapsed while she was at sea.

Michigan was decommissioned on 11 February 1922 following the conclusion of the Washington Naval Treaty which aimed to limit the expansion of battleship and battlecruiser fleets around the world. Michigan put to sea for the last time on 31 August, bound for the breaker's yard in Philadelphia. She arrived there on 1 September and was decommissioned on 11 February 1922. She was broken up in 1924.

Officers and men on board USS Michigan in 1918.



USS Michigan with a horizontal two-tone paint scheme, possibly an experimental camouflage.



9 DELAWARE CLASS

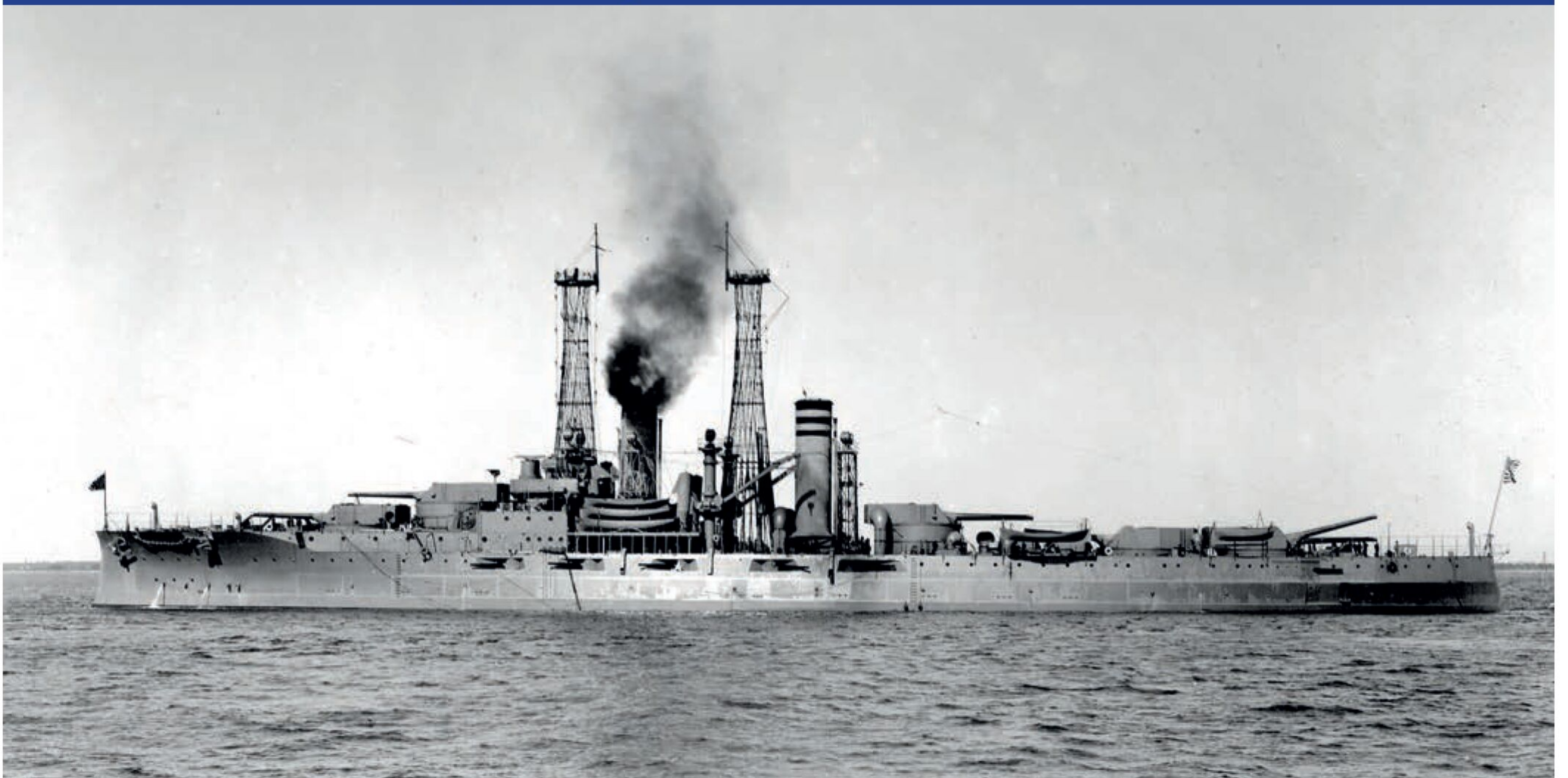
The two Delaware class battleships had comparatively short careers in the US Navy because of the tonnage limitations set out in the Washington Naval Treaty. As conceived, there were originally two versions of the design: one with a displacement of 20,380 tons and ten 12-inch guns, and the other slightly larger design of 24,000 tons with 12 12-inch guns. The larger design was

rejected as being too expensive for the limited increase in firepower it provided. The finished design was not, however, without its faults, as the positioning of the secondary five-inch guns on the gun deck meant that they were all but useless when the ships were under way.

The two ships also differed in their propulsion, with USS *North Dakota* having direct drive Curtis steam turbines

of 25,000shp and USS *Delaware* fitted with two triple-expansion steam engines rated at 25,000shp. Both ships had 14 coal-fired Babcock & Wilcox watertube boilers. Both achieved their design speed, but USS *North Dakota* was more expensive to operate due to their different engine types. These battleships had the world's greatest firepower, with a battery of ten 12-inch guns and an operating range of 6,000 miles.

USS DELAWARE (BB-28)



BUILDER Newport News Shipbuilding

DISPLACEMENT 23,033tons full load

ARMAMENT 10 x 12-inch (305mm), 14 x 5-inch (127mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 4 April 1910

FATE Sold for breaking up 1924

The lead ship in the Delaware class was built at Newport News Shipbuilding. She was laid down on 11 November 1907 and launched on 6 February 1909. Fifteen months later on 4 April 1910 she was commissioned into service with the US Navy. On entering service her armament of ten 12-inch guns made her the world's most powerful warship, albeit for only a few months. Delaware was also notable as

the first battleship of any navy capable of sustained full speed operations for 24 hours.

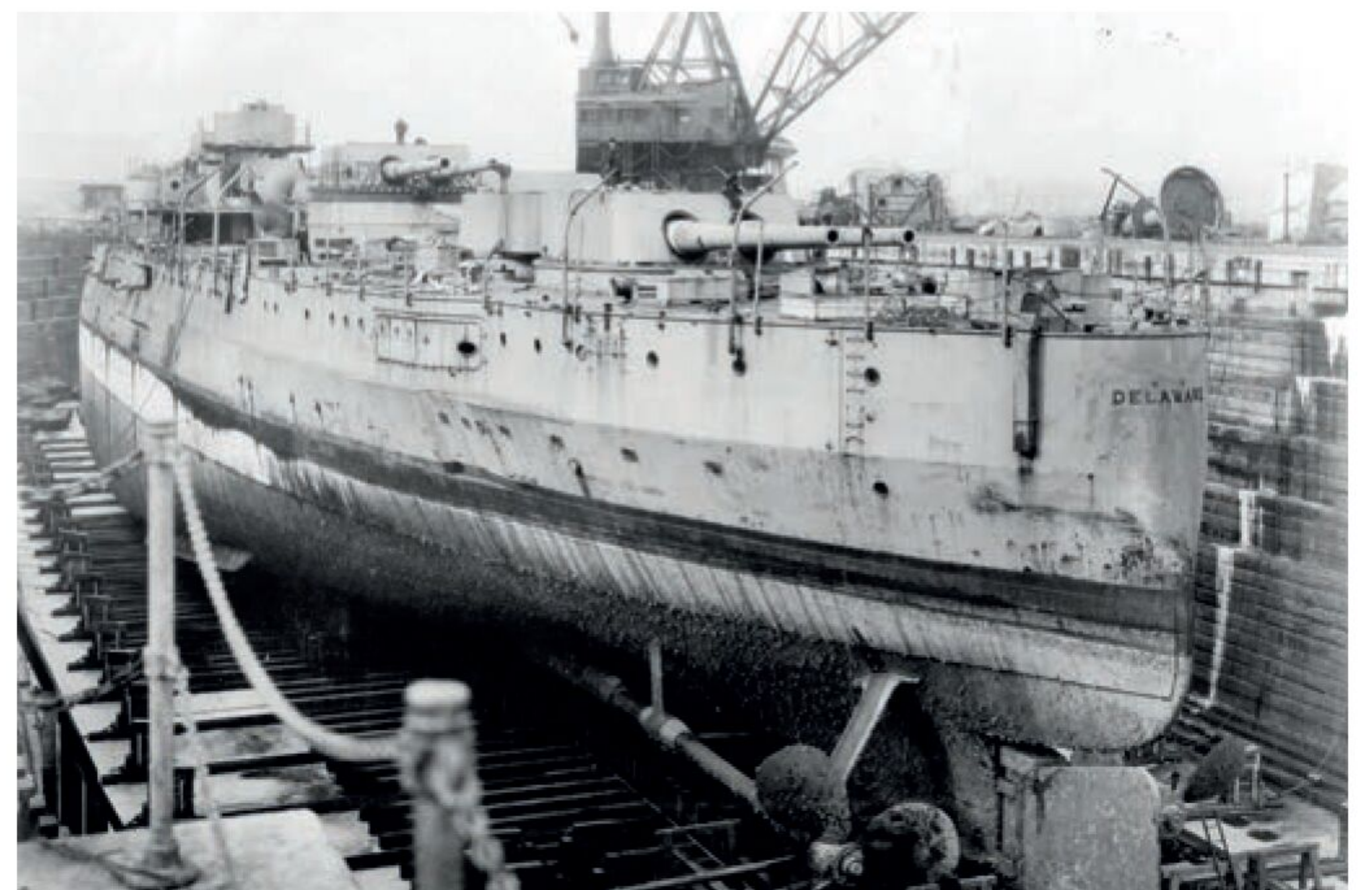
During World War I she served in the US Atlantic Fleet and bolstered the British Grand Fleet during the last months of the war. She did not see any combat operations between 1917 and November 1918. After the war USS Delaware's peacetime role was mostly spent on training cruises and showing the American flag around the world although she did participate in America's involvement in the Mexican Civil War.

The rapid progress in the design and development of battleships in the inter-war years meant that when the Washington Naval Treaty terms were agreed USS Delaware became one of

its victims. She was, however, retained in service long enough to allow for the completion of the new USS Colorado in 1924. She was subsequently decommissioned on 10 November 1923 and scrapped.

▲ USS Delaware circa 1911, shortly after she had entered service.

▼ USS Delaware in dry dock at the Boston Navy Yard, Massachusetts, on 30 January 1924, having been stripped in preparation for scrapping.



USS NORTH DAKOTA (BB-29)

BUILDER Fore River Shipyard

DISPLACEMENT 22,060 tons full load (excluding 380 tons oil fuel)

ARMAMENT 10 x 12-inch (305mm), 14x5inch (127mm), 2 x 21inch (533mm) torpedo tubes

COMPLETED 11 April 1910

FATE Sold for breaking up 1931

▼ USS North Dakota in 1912, just after she had entered service.



The second of the Delaware class ships, USS North Dakota, was authorised by Congress in 1905. She was ordered from the privately-owned Fore River Shipyard, who had submitted a competitive tender for the design and construction of the battleship in response to a US Navy Act asking for private shipyard involvement in the battleship construction programme.

However, the process was flawed and delayed the construction process by 12 months. North Dakota was laid down on 16 December 1907, launched on 10 November 1909 and commissioned on 11 April 1910.

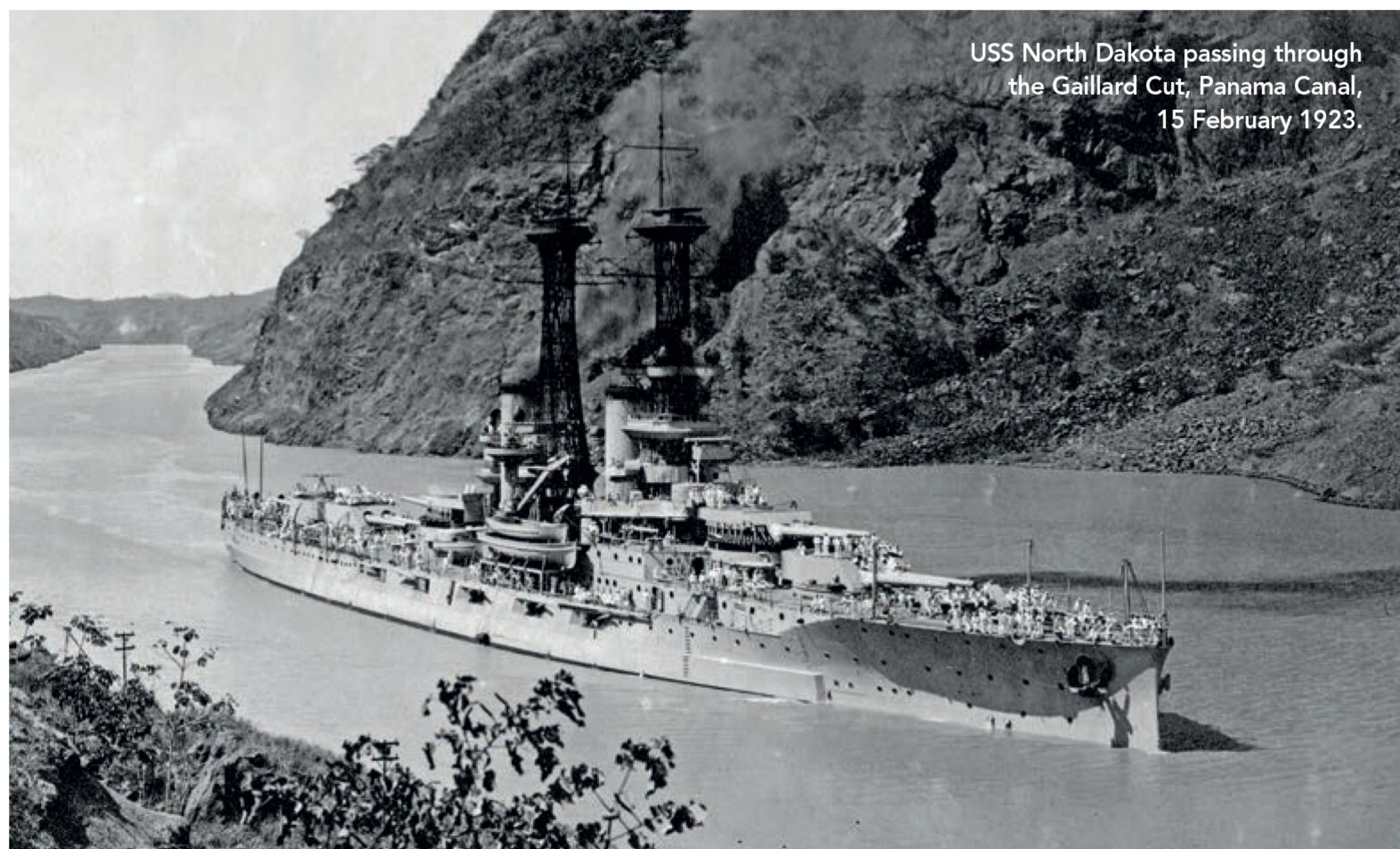
USS North Dakota played no part in World War I due to the unreliability of her turbines, so she remained in port in the US. The engines were replaced in 1917 by new geared turbines. Post-war she continued in her role as training ship for gunnery officers and crossed the North Atlantic to visit Europe. This

journey coincided with the death of the Italian Ambassador to the United States, Vincenzo Macchi di Cellere, whose body was transported home onboard the battleship in October 1919. She made another transatlantic trip in 1923 taking in ports of call in

Spain, Scotland and Scandinavia.

In accordance with the tonnage limits set out in the Washington Naval Treaty, USS North Dakota was sacrificed, but was retained just long enough to witness the arrival in service of the new USS West

Virginia. USS North Dakota was then decommissioned on 22 November 1923. She was converted into a target ship and later the hulk was stored until 1931, when she was finally struck from the Navy List and sold for breaking up.



USS North Dakota passing through the Gaillard Cut, Panama Canal, 15 February 1923.

10 FLORIDA CLASS

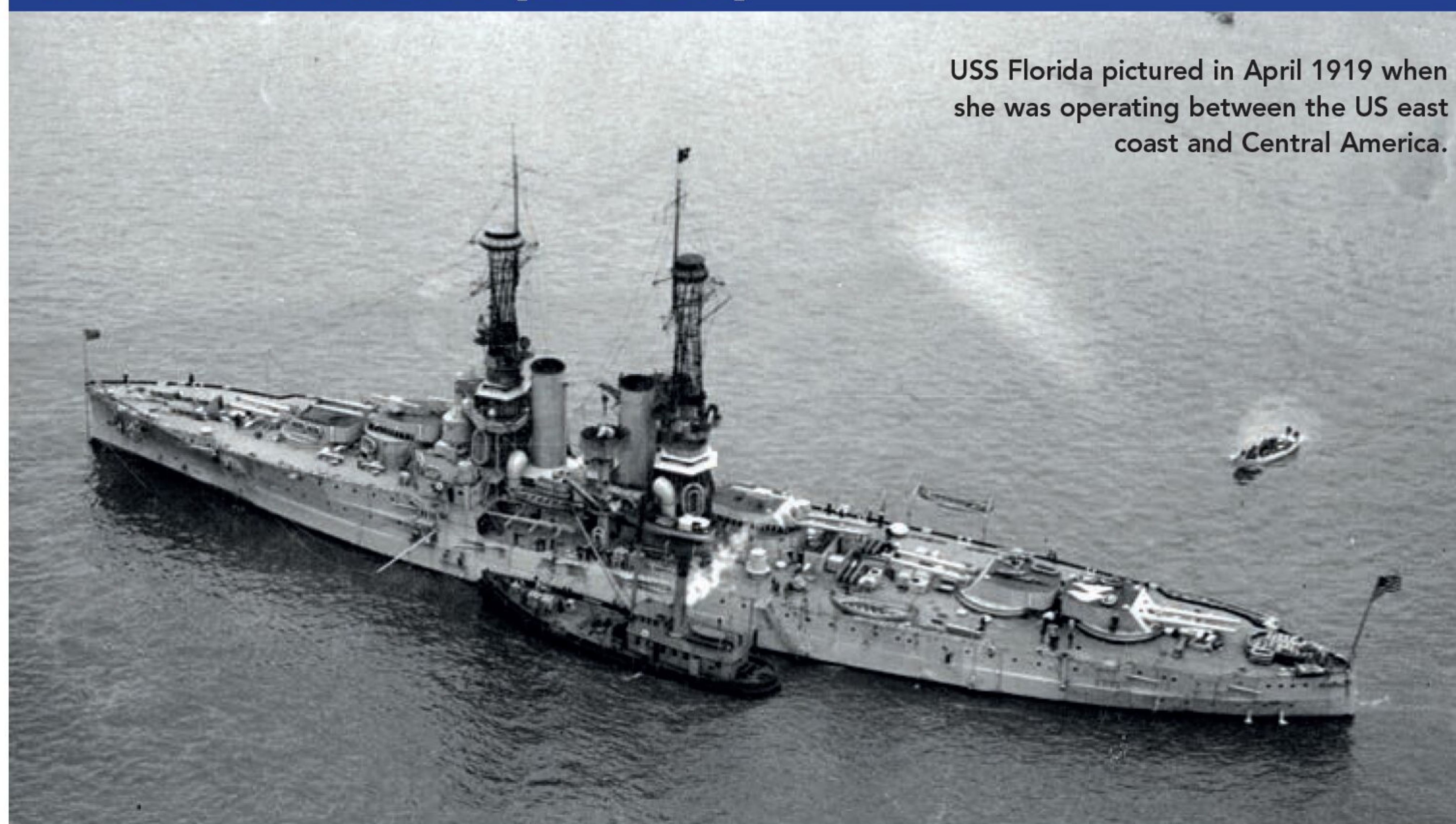
The Florida class battleships, consisting of USS *Florida* (BB-30) and USS *Utah* (BB-31), were commissioned in the early 1910s as part of the US Navy's transition into modern dreadnought design. Essentially, these ships were evolutionary improvements over the preceding Delaware class. The most notable advancement was an enlarged machinery space, allowing the installation of more efficient Parsons or Curtis turbines, which enhanced propulsion reliability and performance.

Armour protection was another area of refinement. The Delaware class had relatively weak protection for its secondary batteries, a vulnerability corrected in the Florida class

by adding light armour to these positions. This improvement, however, introduced additional weight, which was offset by reducing the planned six-inch guns to five-inch/51 calibre weapons. Despite this reduction, the ships maintained a formidable armament of ten 12-inch/45 calibre main guns arranged in five twin turrets.

Both Florida class ships served through World War I and were among the few pre-treaty battleships retained after the Washington Naval Treaty of 1922. Their balanced combination of firepower, protection, and propulsion marked a significant step in US battleship design.

USS FLORIDA (BB-30)



USS Florida pictured in April 1919 when she was operating between the US east coast and Central America.

BUILDER New York Navy Yard

DISPLACEMENT 23,033 tons full load

ARMAMENT 10 x 12-inch (305mm), 14x5inch (127mm), 2 x 21inch (533mm) torpedo tubes

COMPLETED 15 September 1911

FATE Sold for breaking up 1931

USS Florida was built by the New York Navy Yard construction, with work starting on 9 March 1909. She was launched on 12 May 1910, and the commissioning ceremony took place on 15 September 1911. In early 1914 tensions between the United States and Mexico were strained following the Mexican Revolution and America occupied Veracruz. Both of the Florida class ships were deployed to the region

and both sent landing parties ashore on 16 February. US forces took the town but not without significant losses.

USS Florida was next in action during World War I following the United States' entry into the war in April 1917. She joined the US Navy's Battleship Division IX, which was subsumed upon entry into British waters into the Royal Navy's Sixth Battle Squadron. She mostly operated from Scapa Flow on patrols into the North Sea and escorting Norwegian-bound convoys.

Between 1919 and 1924 she resumed her peacetime activities, and in 1924 she began a major two-year refit at the Boston Navy Yard that saw her structure strengthened, anti-torpedo blisters added,

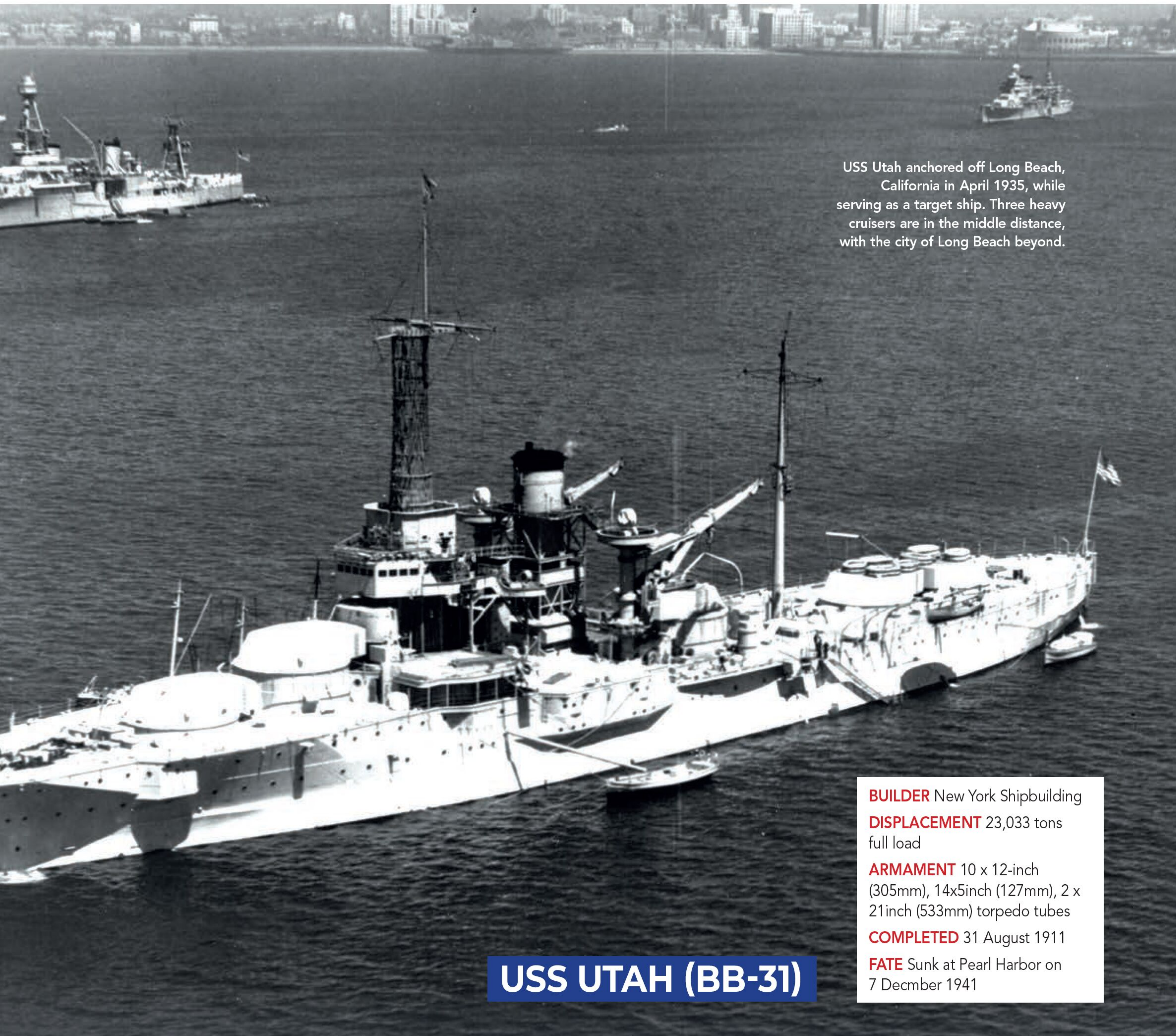
and her secondary gun battery was upgraded, and Curtis geared turbines replaced the Parsons turbines. She was also converted from coal- to oil-firing, being reboilered with four British-designed White-Forster boilers. Her profile was changed when her two stacks were consolidated into a single funnel and her rear lattice mast was replaced with a pole mast.

With all this expense, it was expected that the ship would have a long career, but the London Naval Treaty of 1930 saw both Florida class ships earmarked for early disposal. USS Florida was decommissioned on 16 February 1931 at the Philadelphia Navy Yard, struck from the Naval Register on 6 April 1931, and sold locally for breaking up.



USS Utah is probably best known as being one of the ships sunk during the Japanese attack on Pearl Harbor. But the battleship had an interesting career until her demise on 7 December 1941.

USS Utah was the second Florida class battleship, having a standard displacement of 23,000 tons and a powerful battery of ten 12-inch guns distributed between five twin turrets, plus a large number of



USS Utah anchored off Long Beach, California in April 1935, while serving as a target ship. Three heavy cruisers are in the middle distance, with the city of Long Beach beyond.

USS UTAH (BB-31)

BUILDER New York Shipbuilding

DISPLACEMENT 23,033 tons
full load

ARMAMENT 10 x 12-inch
(305mm), 14x5inch (127mm), 2 x
21inch (533mm) torpedo tubes

COMPLETED 31 August 1911

FATE Sunk at Pearl Harbor on
7 December 1941

secondary five-inch guns. Her armour plating was extensive, ranging from 8 to 11 inches in thickness, with the greatest level of protection given to the engine room, where the ship was equipped with 12 coal-fired boilers and steam turbines that could generate 28,000shp for a top speed of 21 knots.

Utah was built by New York Shipbuilding Corporation and commissioned into the US Navy on 31 August 1911. Three years

later she became embroiled in the Second Battle of Veracruz during the conflict between Mexico and the US. After peacetime operations in 1917, Utah assumed a wartime footing when America joined World War I. Post-war the battleship mostly undertook flag-waving visits around the world including representing the US during the celebrations that followed the Peruvian War of Independence.

In the 1930s, following the

signing of the London and Washington Naval Treaties, USS Utah was progressively downgraded and became radio-controlled target ship AG-16. She lost her main armament and was fitted with a variety of diverse weapons, including quadruple 1.1-inch cannon mountings and a mix of five-inch gun types.

On 7 December 1941 USS Utah was mistakenly identified by Japanese pilots as a battleship due to her profile, and

was attacked with torpedoes and bombs. She was struck by two torpedoes which holed her, and she quickly took on a list. Within minutes she had turned over, taking with her six officers and 52 men. Initial efforts to raise the wreck proved futile and, while weapons were removed, the hulk was partially righted in Pearl Harbor, and moved closer to Ford Island, where it remains in situ as a memorial to those lost in war.

11 WYOMING CLASS

The Wyoming class battleships, comprising USS *Wyoming* (BB-32) and USS *Arkansas* (BB-33), were conceived during the height of the early 20th century naval arms race. President Theodore Roosevelt played a pivotal role in initiating their design, questioning whether the next generation of US battleships should adopt 14-inch guns, instead of the standard 12-inch. Naval architects explored three proposals: one with twelve 12-inch guns,

another with eight 14-inch guns, and a third featuring ten 14-inch guns.

Despite strong arguments for heavier armament, practical considerations prevailed. The 12-gun, 12-inch design was selected because it posed fewer technical challenges, could be constructed more quickly, and was compatible with both existing dock facilities and the newly completed Panama Canal. This decision ensured operational flexibility without requiring costly infrastructure upgrades.

Commissioned in 1912, the Wyoming class represented the peak of the 'standard-type' battleship concept, emphasising uniform speed and tactical cohesion. Each ship mounted twelve 12-inch/50-calibre guns in six twin turrets, supported by improved armour and propulsion systems. Though soon overshadowed by the advent of 14-inch-gun battleships, *Wyoming* and *Arkansas* served extensively, including in World War I, marking an important transitional step in US battleship evolution.

USS WYOMING (BB-32)

BUILDER William Cramp & Sons

DISPLACEMENT 27,243 tons full load

ARMAMENT 12 x 12-inch (305mm), 21x5-inch (127mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 25 September 1912

FATE Sold for breaking up 1947

USS Wyoming was the lead ship in her two ship class. Her construction started at William Cramp and Sons shipyard in Philadelphia on 9 February 1910. On 25 May 1911

she was launched and following a further 16 months of fitting out and sea trials she was completed and commissioned into the Navy on 25 September 1912.

When America joined World War I in 1917 USS Wyoming was one of the American battleships

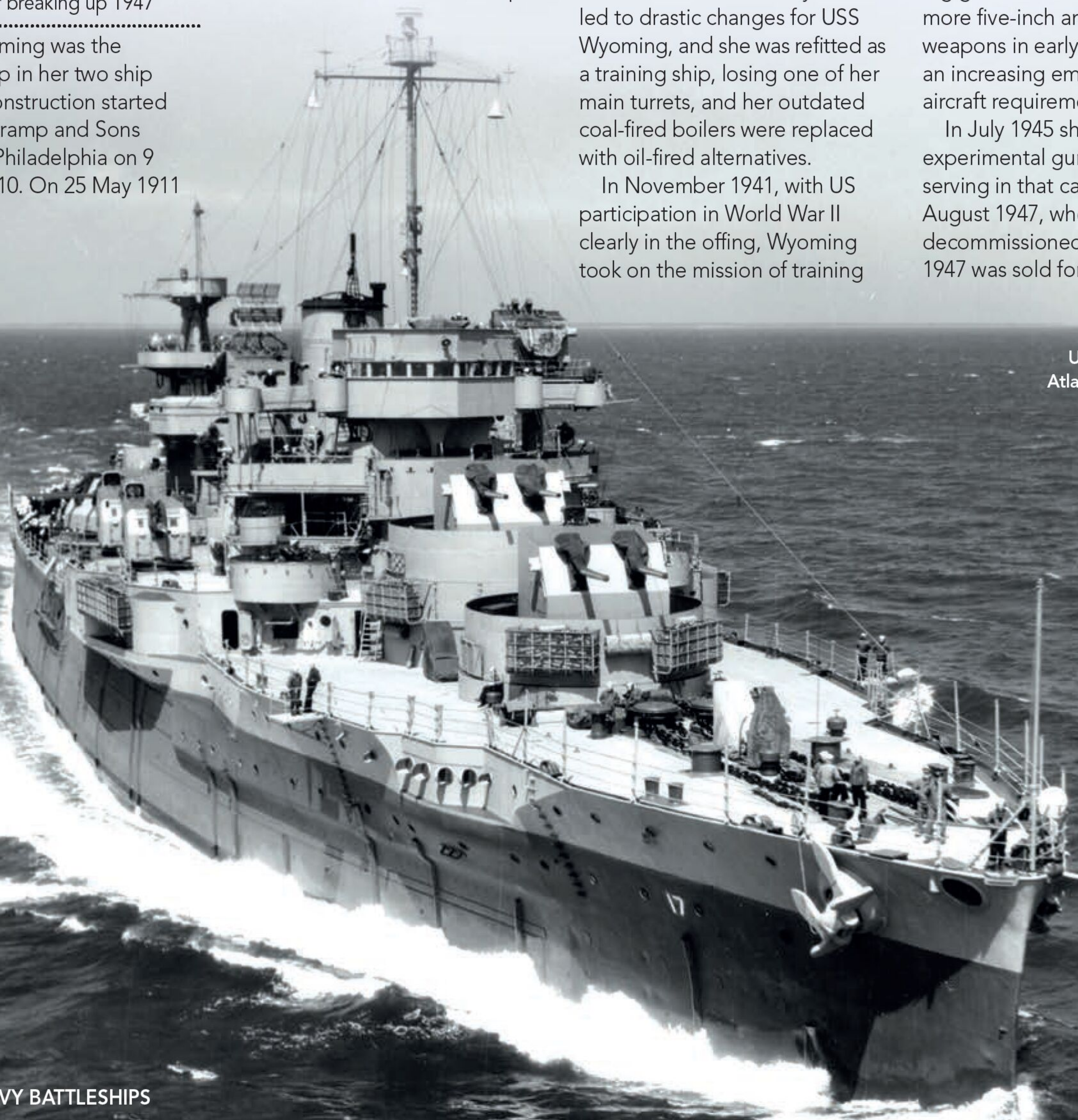
that combined with the British Grand Fleet's Sixth Battle Squadron, although she saw little action. Following the end of the war, the battleship returned to the US where she served in both the Atlantic and Pacific fleets. The London Naval Treaty of 1930 led to drastic changes for USS Wyoming, and she was refitted as a training ship, losing one of her main turrets, and her outdated coal-fired boilers were replaced with oil-fired alternatives.

In November 1941, with US participation in World War II clearly in the offing, Wyoming took on the mission of training

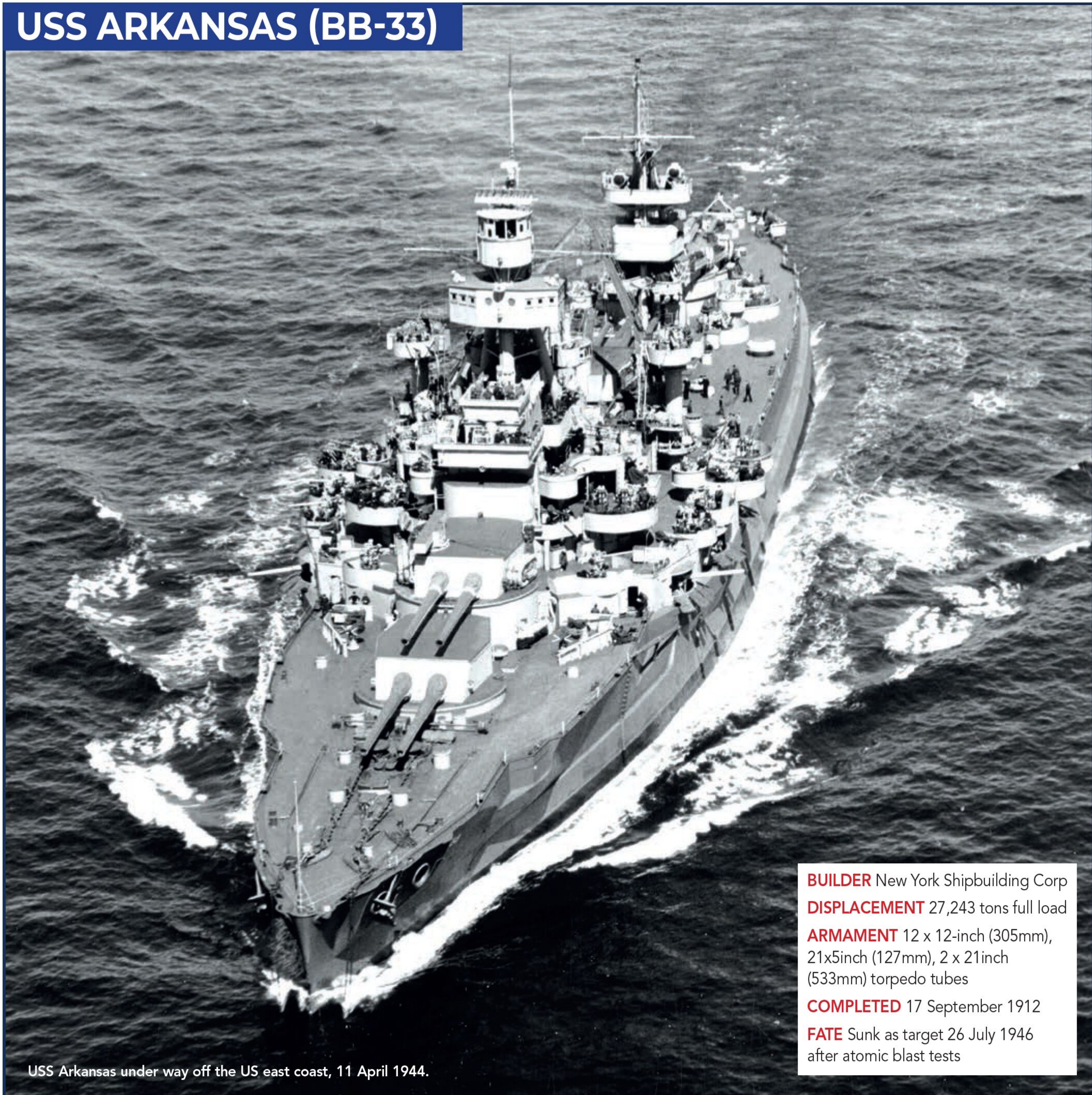
thousands of sailors in the art and science of gunnery. Throughout the war, she operated in the Chesapeake Bay area, reportedly firing off more ammunition than any other US Navy ship. Wyoming's remaining big guns were replaced with more five-inch and smaller weapons in early 1944, reflecting an increasing emphasis on anti-aircraft requirements.

In July 1945 she became an experimental gunnery ship, serving in that capacity until August 1947, when she was decommissioned and in October 1947 was sold for scrapping.

USS Wyoming in the Atlantic, 30 April 1945.



USS ARKANSAS (BB-33)



USS Arkansas under way off the US east coast, 11 April 1944.

BUILDER New York Shipbuilding Corp
DISPLACEMENT 27,243 tons full load
ARMAMENT 12 x 12-inch (305mm),
21x5inch (127mm), 2 x 21 inch
(533mm) torpedo tubes
COMPLETED 17 September 1912
FATE Sunk as target 26 July 1946
after atomic blast tests

USS Arkansas (BB-33), the second of the Wyoming class battleships, had an inauspicious start to her career. During builder's trials on 4 June 1912 she struck a submerged rock, causing serious hull damage. Built by the New York Shipbuilding Corporation, her keel was laid on 25 January 1910, and she was launched on 14 January 1911, being commissioned on 17 September 1912 after repairs.

Her early years were routine,

with training cruises and a notable European deployment in 1913. In 1925 Arkansas underwent a major modernisation: her 12 coal fired boilers were replaced by four oil-fired boilers, their uptakes trunked into a single funnel; anti-aircraft guns were added, but her original 12 12-inch guns remained. Unlike many contemporaries, Arkansas stayed in front-line service through the 1930s, becoming the oldest US battleship to fight in World War II.

Though relegated to secondary roles, Arkansas was far from idle. She provided naval gunfire support during the Normandy landings on 6 June 1944, assisted in Operation Dragoon in southern France, and later joined the Pacific Fleet, bombarding Iwo Jima and Okinawa during the battles against the Japanese. After the war, she transported troops home during Operation Magic Carpet before being decommissioned on 29 July 1946.

Selected for Operation Crossroads atomic tests at Bikini Atoll, the now obsolete Arkansas survived the first airburst with relatively little damage. The second, an underwater detonation only 250 yards away, proved fatal. Overwhelmed by heat and pressure, she sank on 25 July 1946. Arkansas was engulfed in the column of water driven up by the powerful blast and quickly sank. She remains on the sea bed at Bikini Atoll.

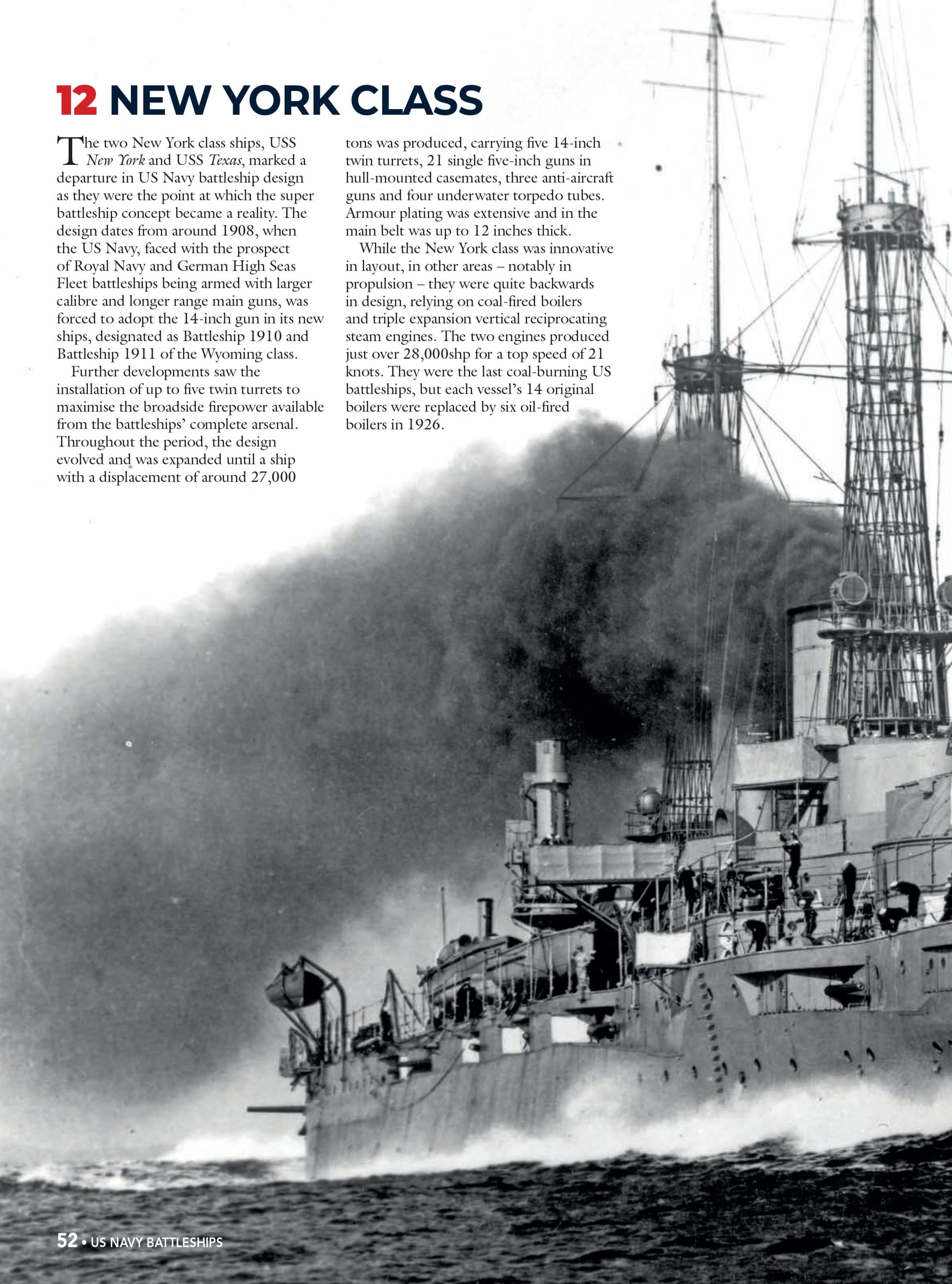
12 NEW YORK CLASS

The two New York class ships, USS *New York* and USS *Texas*, marked a departure in US Navy battleship design as they were the point at which the super battleship concept became a reality. The design dates from around 1908, when the US Navy, faced with the prospect of Royal Navy and German High Seas Fleet battleships being armed with larger calibre and longer range main guns, was forced to adopt the 14-inch gun in its new ships, designated as Battleship 1910 and Battleship 1911 of the Wyoming class.

Further developments saw the installation of up to five twin turrets to maximise the broadside firepower available from the battleships' complete arsenal. Throughout the period, the design evolved and was expanded until a ship with a displacement of around 27,000

tons was produced, carrying five 14-inch twin turrets, 21 single five-inch guns in hull-mounted casemates, three anti-aircraft guns and four underwater torpedo tubes. Armour plating was extensive and in the main belt was up to 12 inches thick.

While the New York class was innovative in layout, in other areas – notably in propulsion – they were quite backwards in design, relying on coal-fired boilers and triple expansion vertical reciprocating steam engines. The two engines produced just over 28,000shp for a top speed of 21 knots. They were the last coal-burning US battleships, but each vessel's 14 original boilers were replaced by six oil-fired boilers in 1926.



USS NEW YORK (BB-34)

BUILDER Brooklyn Naval Yard

DISPLACEMENT 28,367 tons
full load

ARMAMENT 10 x 14-inch (356mm),
21 x 5-inch (127mm), 4 x 21-inch
(533mm) torpedo tubes

COMPLETED 15 April 1914

FATE Sunk following atomic bomb
blast tests, 8 July 1948

USS New York was built by Brooklyn Navy Yard: she was laid down in 1911 and launched on 30 October 1912. After a further two years of work, the battleship was commissioned into service on 15 April 1914. She was initially involved with US Navy operations around Veracruz and then in the North Atlantic.

The United States' entry into World War I in 1917 saw the battleship join the Sixth Battle Squadron of the British Grand Fleet and she mostly served as an escort for convoys across the Atlantic, although there are conflicting reports that the battleship may have collided with a U-boat.

Immediately after the war, USS New York resumed her peacetime duties of training and showing the flag around the world. In the 1920s both New York class battleships were given refits which saw upgrades to their electronics, gunnery and most notably a changed from coal- to oil-fired boilers.

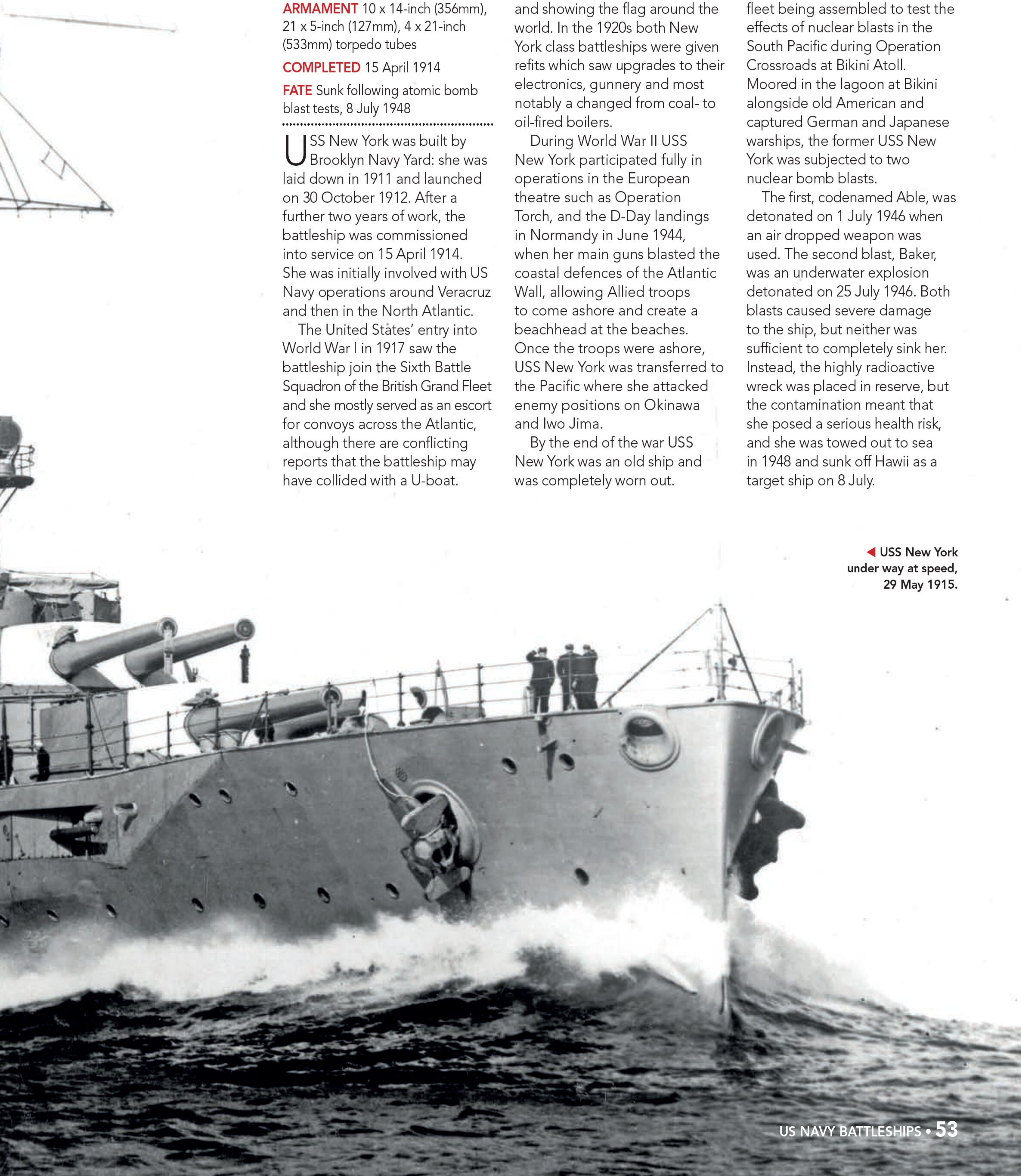
During World War II USS New York participated fully in operations in the European theatre such as Operation Torch, and the D-Day landings in Normandy in June 1944, when her main guns blasted the coastal defences of the Atlantic Wall, allowing Allied troops to come ashore and create a beachhead at the beaches. Once the troops were ashore, USS New York was transferred to the Pacific where she attacked enemy positions on Okinawa and Iwo Jima.

By the end of the war USS New York was an old ship and was completely worn out.

She was decommissioned on 29 August 1946 and was subsequently allocated to the fleet being assembled to test the effects of nuclear blasts in the South Pacific during Operation Crossroads at Bikini Atoll. Moored in the lagoon at Bikini alongside old American and captured German and Japanese warships, the former USS New York was subjected to two nuclear bomb blasts.

The first, codenamed Able, was detonated on 1 July 1946 when an air dropped weapon was used. The second blast, Baker, was an underwater explosion detonated on 25 July 1946. Both blasts caused severe damage to the ship, but neither was sufficient to completely sink her. Instead, the highly radioactive wreck was placed in reserve, but the contamination meant that she posed a serious health risk, and she was towed out to sea in 1948 and sunk off Hawaii as a target ship on 8 July.

◀ USS New York
under way at speed,
29 May 1915.



USS TEXAS (BB-35)

BUILDER Newport News Shipbuilding

DISPLACEMENT 28,367 tons full load

ARMAMENT 10 x 14-inch (356mm), 21 x 5-inch (127mm), 4 x 21-inch (533mm) torpedo tubes

LAID DOWN 17 April 1911; launched 18 May 1912; commissioned 12 March 1914

DECOMMISSIONED 21 April 1948; struck off 30 April 1948

CURRENT Memorial since 1948

On 24 June 1910 Congress authorised the construction of the battleship USS Texas, which went on to become the last surviving dreadnought battleship. She was built by Newport News Shipbuilding in Virginia, with the keel laying taken place on 17 April 1911. She was launched on 18 May 1912, and after a further two years she was commissioned on 12 March 1914.

Texas served in Mexican waters following the 'Tampico Incident' in May 1914 after Mexican troops seized an American gunboat, but saw no action there. She helped with the landing of American ground forces and seized the custom house at Veracruz.

With the United States' entry into World War I in 1917, Texas

was sent to Europe and escorted convoys across the North Atlantic, working with the British 6th Battle Squadron. On 27 September 1917 the battleship ran aground on Block Island while navigating a minefield. In November 1918 she was at Scapa Flow just before arrival of the German High Seas Fleet after its surrender.

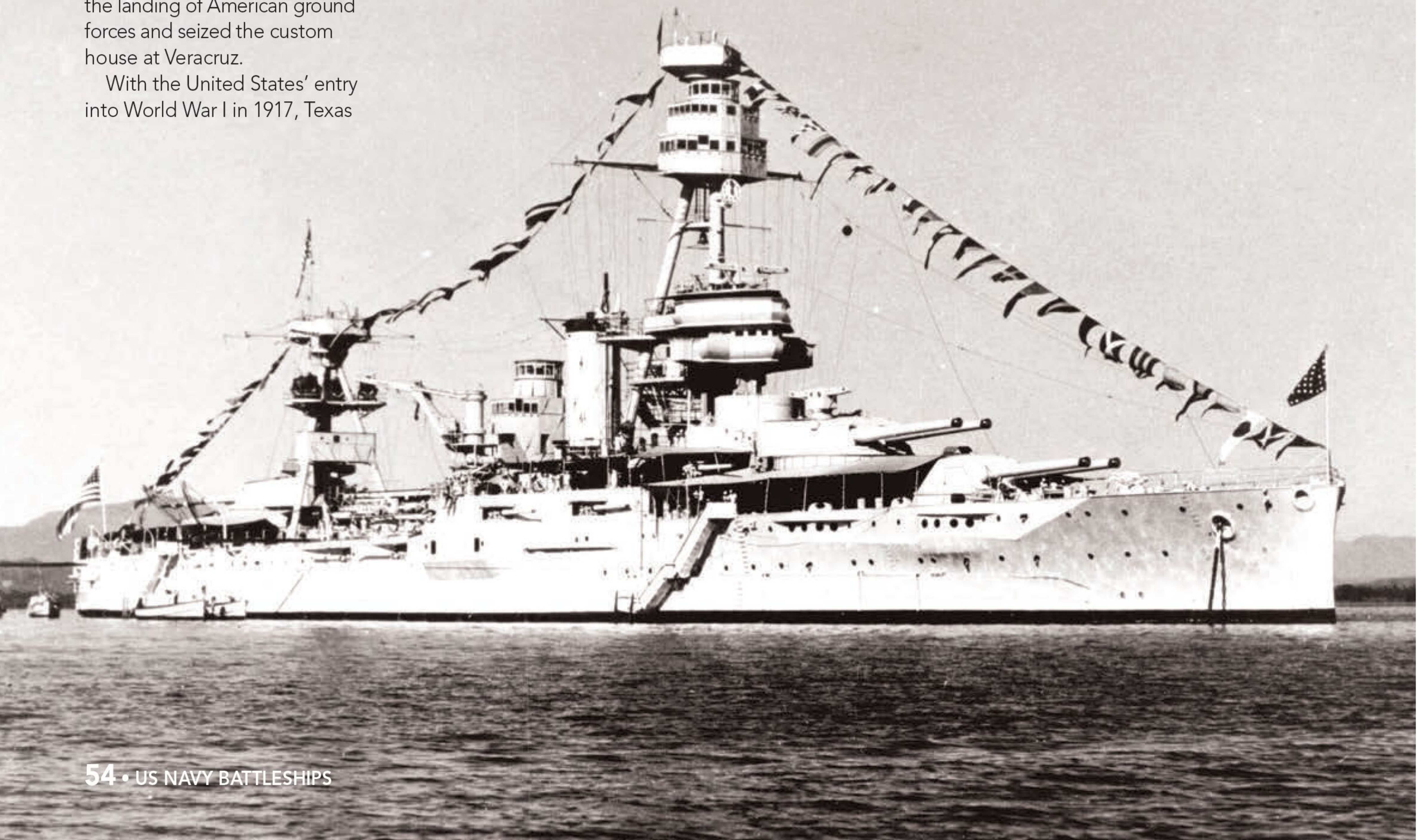
In the aftermath of the War, USS Texas escorted President Woodrow Wilson to the Paris Peace Conference and later made history by becoming the first American battleship to launch an aircraft, in this case a Sopwith Camel, during operations off Guantanamo Bay in Cuba. In July 1919 she was transferred to the Pacific Fleet, where she served for the next five and a half years.

On 25 November 1924 Texas was chosen to fire at the incomplete hull of the dismantled battleship USS Washington to test the effectiveness of the hulk's armour and the penetrative effects of the latest high explosive and armour-piercing

shell technologies. The tests ended with Washington being sunk. In 1925 Texas went for a modernisation refit at Norfolk Navy Yard and, upon completion, she was designated as Flagship of the United States Fleet.

▲ USS Texas off the Maine coast in November 1944, painted in Camouflage Measure 31a.

▼ USS Texas dressed overall for Navy Day, 27 October 1940.





WORLD WAR II

With America staying out of the early stages of World War II, Texas joined the Neutrality Patrols to protect American isolationist policies. The Japanese attack on Pearl Harbor,

however, changed everything. Texas was safely in Maine during the attack and was dispatched to Europe in January 1942 to escort Atlantic convoys and bolster Britain's defences.

USS Texas participated in most of the major naval battles of World War II, including Operation Torch against the Vichy French in Morocco, and Operation Overlord, the D-Day invasion of Normandy in June 1944, when her guns attacked German defences on Omaha beach as US troops tried to get ashore against German resistance.

On 25 June 1944, together with the battleships Arkansas and Nevada, four cruisers and 11 destroyers, Texas took part in the Battle of Cherbourg between the guns of the battleships and Batterie Hamburg, a group of four nine-inch guns ashore. At 13.16 a German shell skidded off Texas's conning tower before exploding, wrecking the ship's pilot house and injuring seven men. Twenty minutes later a shot from the battleship destroyed one of the German guns.

After the success of the D-Day invasion, Texas was sent to the Mediterranean to help with

Operation Dragoon, the invasion of the southern coast of France. On completion she returned to the United States, arriving at New York on 14 September 1944.

Her war was far from over, however, as the need for heavy bombardment ships in the Pacific was pressing. So Texas sailed through the Panama Canal to join American forces pushing the Japanese back to their home islands. The Pacific campaign was bitter. Texas participated in the invasions of Okinawa and the Battle of Leyte Gulf before the war was over. Texas returned home to join the reserve fleet at Baltimore.

PRESERVATION

Such was the affection held by the people of Texas for their namesake warship that a fundraising campaign was launched when it became known she was being withdrawn from service. In 1947 \$225,000 was raised, and USS Texas was transferred to the Battleship Texas Commission on 17 April 1947, becoming the first American battleship preserved as a museum ship in the US.

For nearly eight decades, she

has been moored at San Jacinto Battleground State Historic Site near Houston, a location chosen for its symbolic connection to Texas history. However, preserving a century-old battleship afloat has proven a formidable challenge. Exposure to saltwater and humidity has led to severe corrosion, hull leaks, and structural deterioration. Over the years, millions of dollars have been spent on patching and pumping to keep her afloat, and she has been dry-docked several times for repairs.

The most ambitious restoration effort began in 2023, when Texas was moved to a Galveston dry dock for a multi-year overhaul. This project includes replacing steel plating, reinforcing internal structures, and installing modern systems to ensure long-term stability. Once complete, the battleship will return as the centrepiece of naval heritage, continuing her role as an educational and historical landmark. Despite decades of costly maintenance, USS Texas remains a symbol of resilience and pride, preserved through the dedication of Texans and naval history enthusiasts.



USS Texas in 2012. Her time in preservation has been challenging, with constant maintenance and repairs being needed.

13 NEVADA CLASS

The Nevada class marked a significant evolution in US battleship design when introduced in 1916. Conceived under displacement limits of 27,500 tons, these ships were the first to adopt the ‘all-or-nothing’ armour scheme, concentrating heavy protection on vital areas while leaving less critical sections unarmoured. Two vessels of the class were built, USS *Nevada* (BB-36) and USS *Oklahoma* (BB-37), and both played pivotal roles in the interwar period and World War II.

Their main battery consisted of ten

14-inch guns arranged in two triple turrets forward and aft, with a twin turret amidships, a layout that maximised firepower while maintaining stability. Secondary armament included 21 5-inch guns for defence against smaller craft, supplemented by four 21-inch submerged torpedo tubes. Armour featured a 13.5-inch belt and deck plating up to 2.9 inches thick. Propulsion differed between the sisters: *Nevada* employed geared steam turbines, while *Oklahoma* retained older triple-expansion engines. Both types delivered

speeds of around 20 knots.

At Pearl Harbor on 7 December 1941 both ships were caught in the Japanese attack. *Oklahoma* capsized after multiple torpedo hits, while *Nevada* famously attempted to depart before beaching to avoid sinking. *Nevada* was later repaired and served in the Atlantic and Pacific, including the Normandy landings and Iwo Jima bombardments, before being decommissioned in 1946. The Nevada class bridged early dreadnought concepts and modern battleship doctrine.

USS NEVADA (BB-36)

BUILDER Fore River Shipyard Co

DISPLACEMENT 28,400 tons full load

ARMAMENT 10 x 14-inch (356mm), 21 x 5-inch (127mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 11 March 1916

FATE Sunk after atomic bomb test blasts 31 July 1948

.....
USS Nevada was built by the Fore River Shipyard Company. She was laid down

on 4 November 1912 and final fitting-out was split between Boston and New York Navy Yards. She was commissioned into service with the Atlantic Fleet on 26 May 1916.

USS Nevada was part of Battleship Division 9 during World War I, but never fired her guns in anger. She was, however, one of ten battleships and 28 destroyers escorting the liner George Washington,

with US President Woodrow Wilson aboard, into Brest on 13 December 1918, for him to attend the Paris Peace Conference.

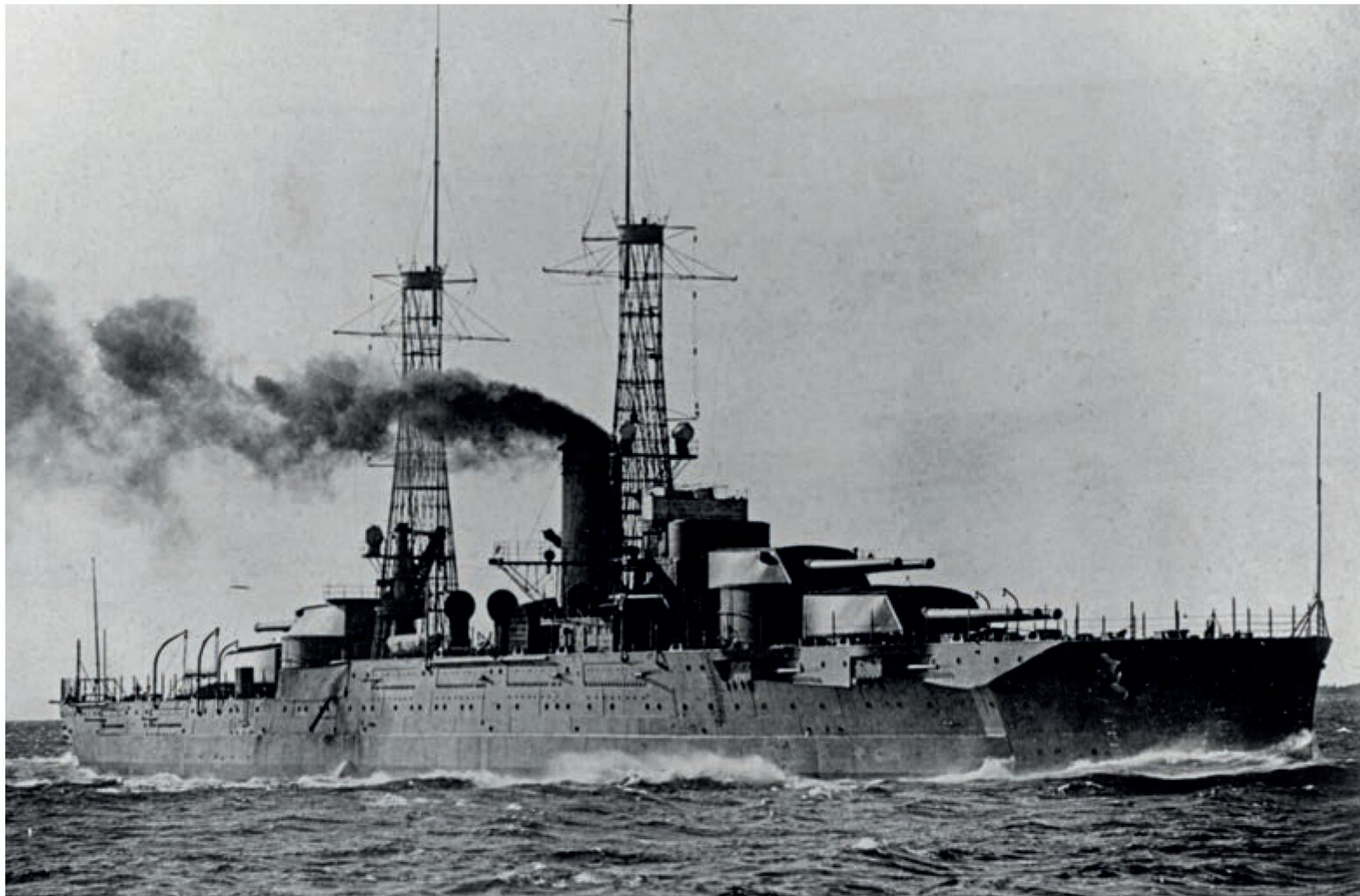
Between 1918 and 1927 USS Nevada showed the American flag across the Pacific and South America. Between August 1927 and January 1930 she was in Norfolk Navy Yard being extensively modernised. Her profile was transformed, and anti-torpedo bulges and six new Bureau Express boilers were installed. Her guns could,

following the refit, elevate to 30 degrees, increasing their range. In this guise she served for another 11 years within the Pacific Fleet.

On Sunday 7 December 1941 Nevada was in Pearl Harbor, not attached to any other ships, and this allowed her to get under way as the Japanese aircraft attacked. At just after 08.00 the ship was struck by a single 18-inch Type 91 Mod 2 torpedo. Luckily steam had been raised onboard the battleship prior to the attack allowing USS Nevada to get underway at 08.40. As she



USS Nevada (BB-36) under way off the US Atlantic coast on 17 September 1944, photographed from a blimp of squadron ZP-12.



Crossroads. Painted orange, Nevada survived two Atomic bomb blasts. Although extremely radioactive, the heavily damaged vessel was towed to Pearl Harbor and decommissioned on 29 August 1946. She remained there until she was sunk as a gunnery practice target. She withstood a sustained salvo of shells from USS Iowa before succumbing to an aerial torpedo which sank the old warrior on 31 July 1948.

◀ USS Nevada during her running trials in early 1916. She was commissioned in March 1916 and operated in the western Atlantic and the Caribbean until mid-1918

▼ Forward 14/45 guns on USS Nevada fire on positions ashore in support of the D-Day landings on Utah Beach, 6 June 1944.

slowly moved down the narrow channel towards the open sea, Nevada became a prime target for the Japanese who wanted to sink her to block the entrance to Pearl Harbor. Up to 18 Japanese bombers attacked, scoring five hits and disabling her. She was grounded at Hospital Point to prevent her from sinking, and 60 of her crew were killed.

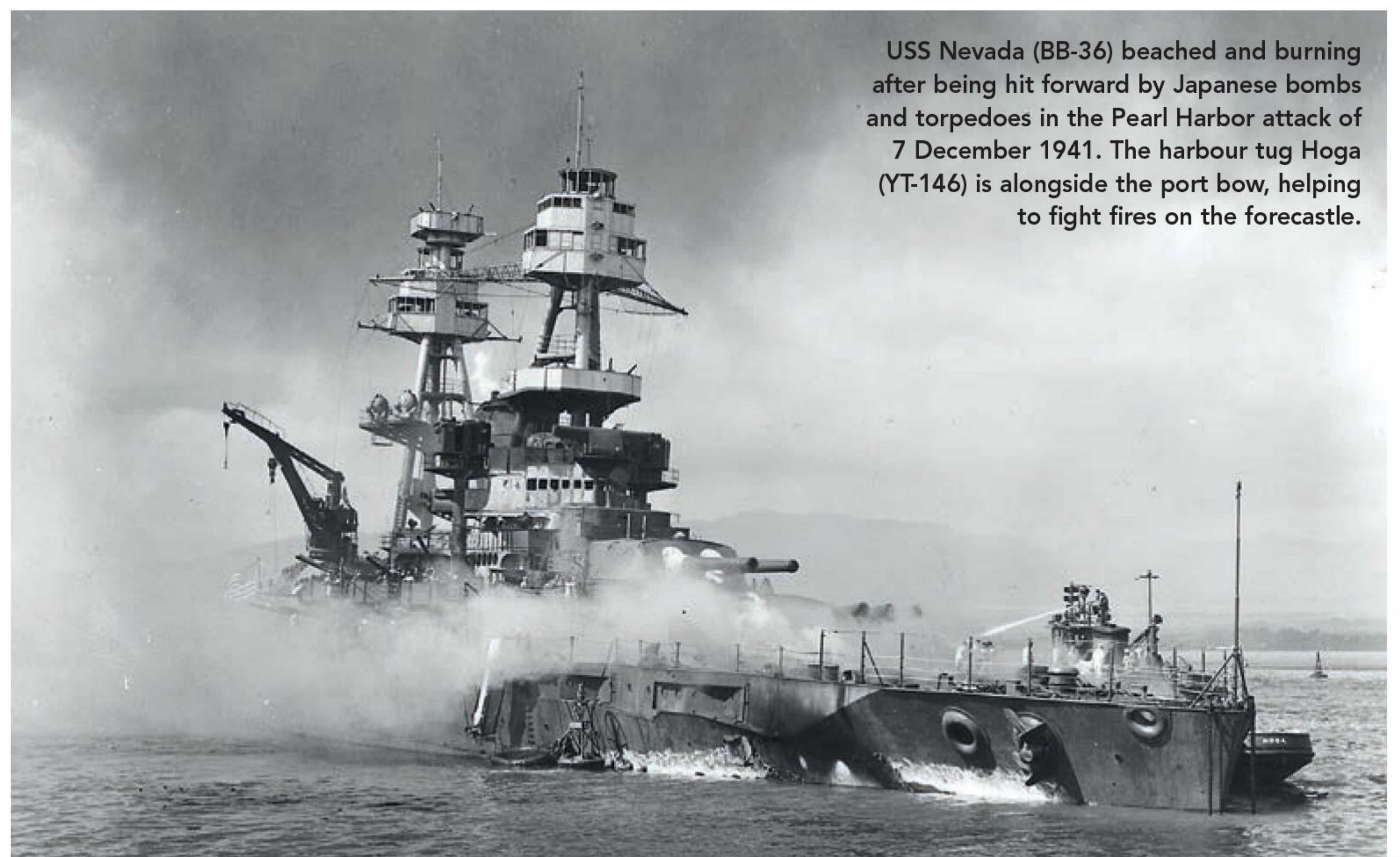
USS Nevada was subsequently refloated and sailed to Puget Sound Navy Yard for repairs and modernisation, which was completed in October 1942. On re-entering service, her first mission was to recapture the island of Attu in the Aleutian Islands between 11 and 18 May 1943. Following further modernisation, Nevada joined the Atlantic Fleet for convoy escort duties. In June 1944 Nevada was one of the ships to attack the German positions in Normandy and Cherbourg.

Following D-Day Nevada was required for the invasion of Southern France, Operation Dragoon, between 15 August and 25 September and encountered resistance from a heavily defended fortress called 'Big Willie' that guarded the approaches to the port of Toulon. On one day USS Nevada fired 354 salvos at the fort.

USS Nevada was then moved to the Pacific, where she took

part in actions at Iwo Jima and Okinawa. At the latter she was struck on 24 March 1945 by a kamikaze which hit the main deck next to number 3 turret, leaving 11 crew dead and another 49 severely wounded. Following a brief period spent with the occupying forces, USS Nevada sailed for home where she was placed in reserve.

By war's end USS Nevada was worn out and obsolete and it was decided that she would be expended as a target ship for nuclear bomb tests in the Pacific at Bikini during Operation



USS Nevada (BB-36) beached and burning after being hit forward by Japanese bombs and torpedoes in the Pearl Harbor attack of 7 December 1941. The harbour tug Hoga (YT-146) is alongside the port bow, helping to fight fires on the forecastle.

USS OKLAHOMA (BB-37)

BUILDER New York Shipbuilding

DISPLACEMENT 28,400 tons full load

ARMAMENT 10x 14-inch (356mm), 21 x 5-inch (127mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 2 May 1916

FATE Sunk at Pearl Harbor December 1941

The second Nevada class battleship was named after the state of Oklahoma and was built by the New York Shipbuilding Corporation. The first steel was laid on 26 October 1912 and work progressed until her launching on 23 March 1914. Her construction was far from trouble free as on 19 July 1915 a fire was detected in the forward main battery. This was the third such fire in a US battleship under construction in a month. The cause was later attributed to poor insulation.

Once completed, USS Oklahoma was commissioned into the US Navy on 2 May 1916. During World War I she was tasked with protecting Europe-bound convoys as part of Battleship Division Six. Although her war record was quiet, she was one of the warships assigned to escort and protect the liner George Washington which was carrying American

President Woodrow Wilson to Europe for the peace talks at Versailles.

The inter-war years were mostly spent showing the American flag around the world including to South America and Australia. Between 1927 and 1929 Oklahoma was modernised with the addition of an aircraft catapult, new thicker and improved armour plating and eight five-inch/25 cal guns. Her profile was also altered with the addition of anti-torpedo bulges.

In 1936 she was deployed to the Mediterranean, where she was used to rescue American citizens fleeing fighting during the Spanish Civil War. On her return to the United States, she transferred to the Pacific Fleet.

Under the terms of the Washington Naval Treaty, USS Oklahoma was to be retired from service on 2 May 1942. Her career, however, came to a catastrophic and tragic end on the morning of Sunday 7 December 1941 when the Imperial Japanese Navy bombed the battleships of the US Pacific Fleet at Pearl Harbor.

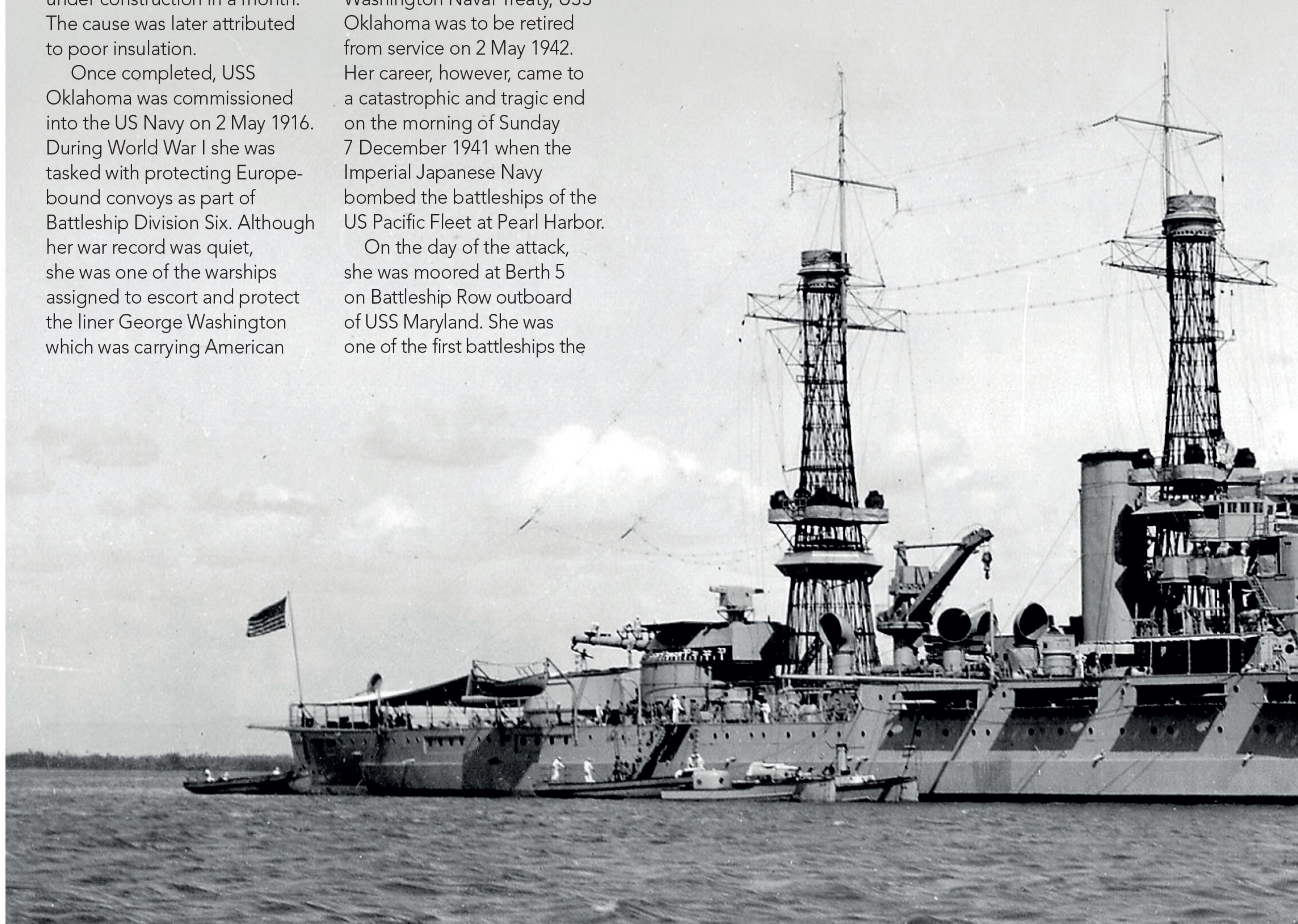
On the day of the attack, she was moored at Berth 5 on Battleship Row outboard of USS Maryland. She was one of the first battleships the

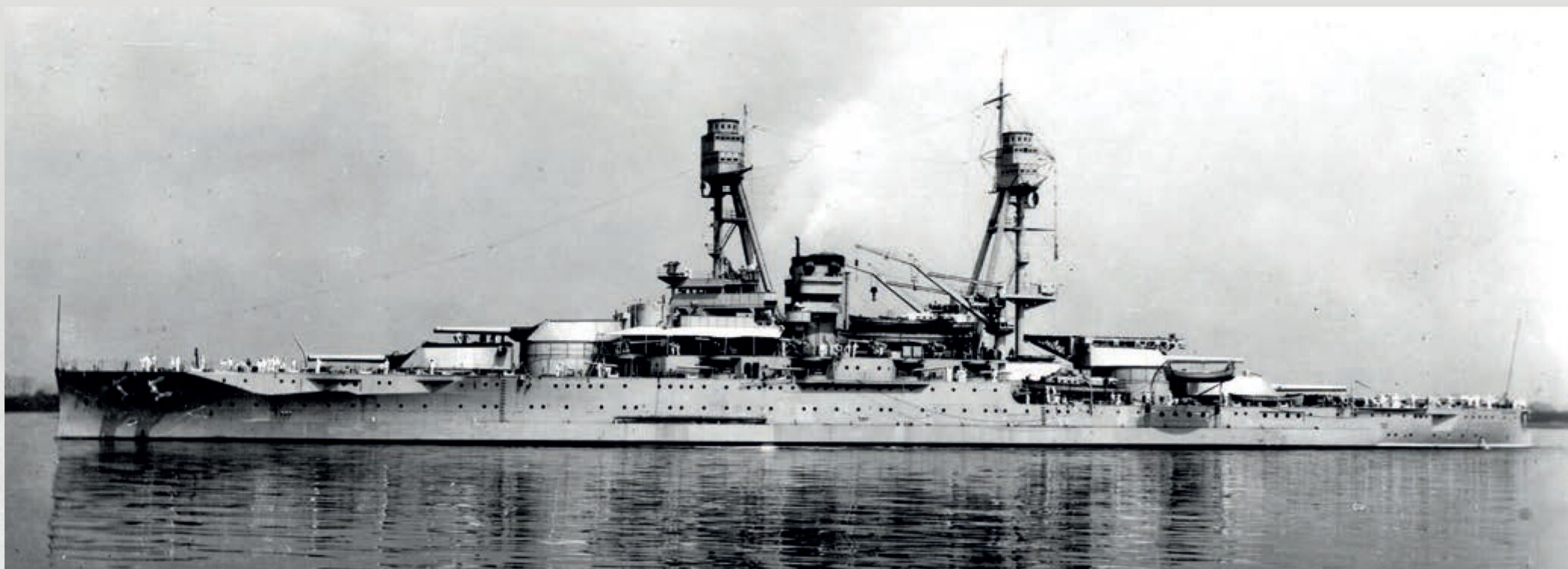
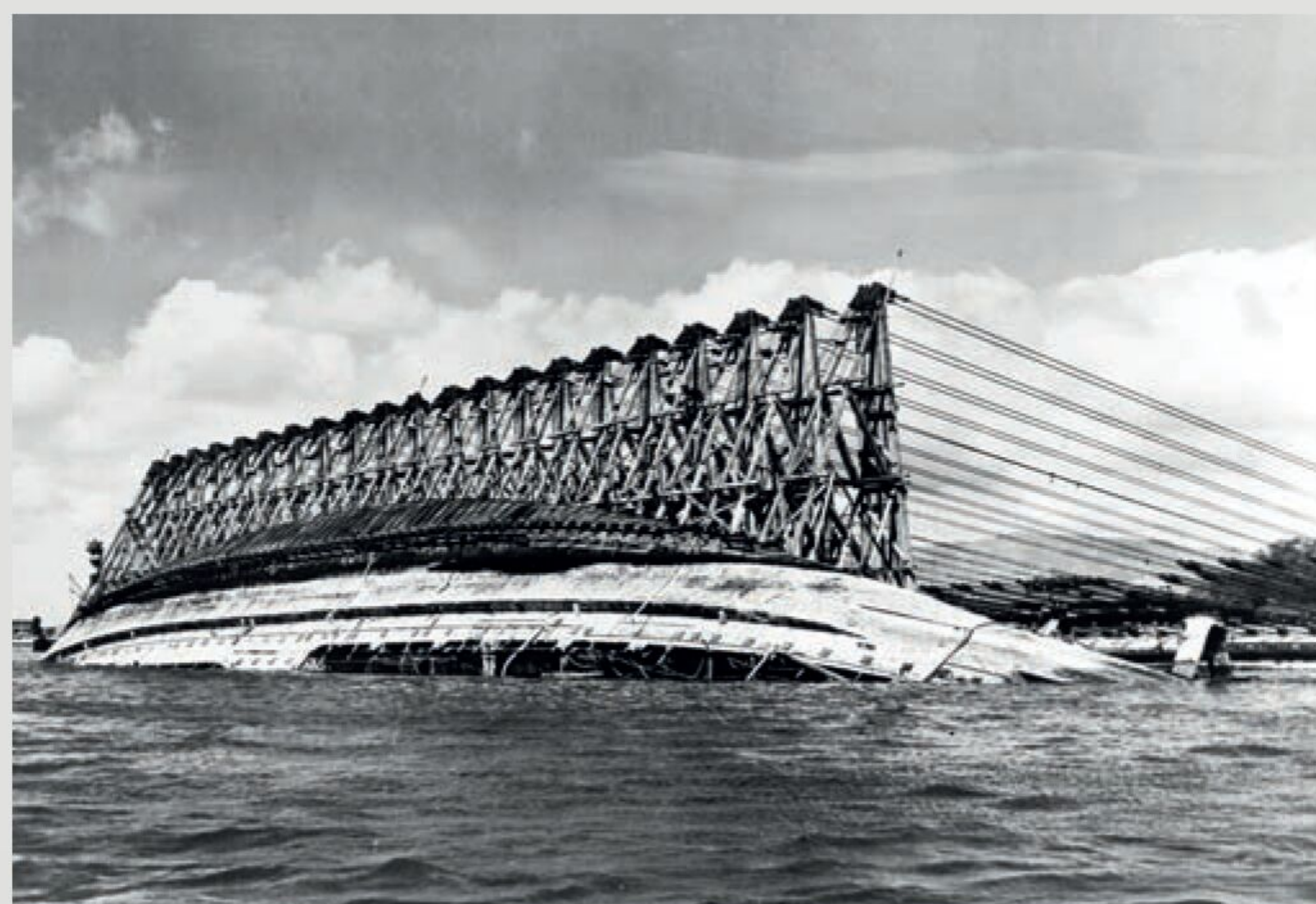
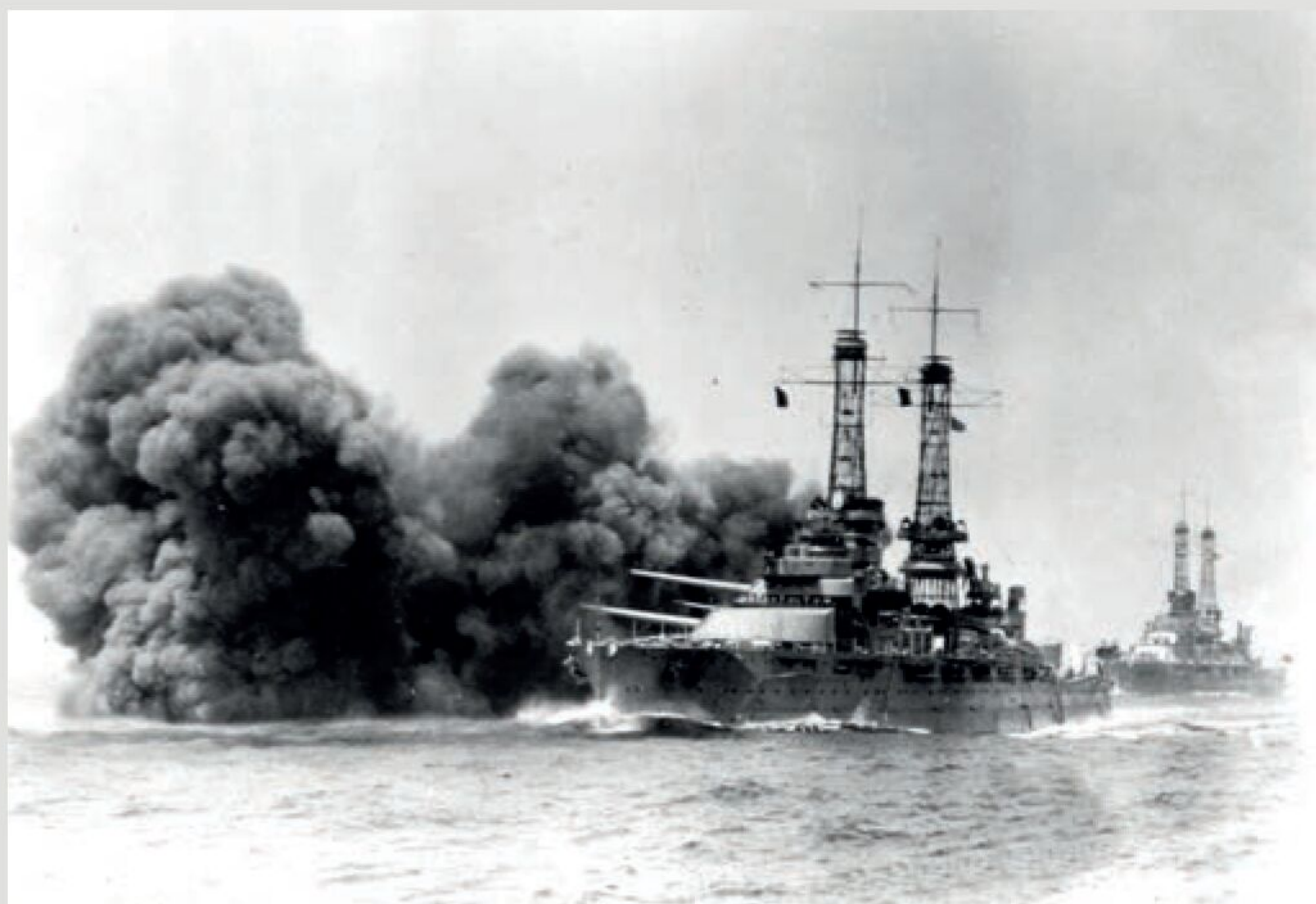
Japanese aircraft attacked. Within minutes of the attack starting, the battleship had been struck by three torpedoes that blew away large sections of her anti-torpedo bulges. As the ship filled with water she started to capsize to port. Then another two torpedoes struck. She turned over within 12 minutes of the first torpedo strike, having been hit by seven or maybe eight torpedoes and bombs, claiming the lives of 429 of her crew.

It took eight months to salvage the wreck, with the operation starting on 15 July 1942. She was subsequently righted in a major operation that saw 20,000 tonnes of water pumped out of the hull and 4,429 tons of coral soil deposited in front of her bow to prevent

the former battleship from rolling uncontrollably. A huge system of winches and pulleys was assembled ashore.

The salvage operation commenced on 8 March but was not finished until 16 June 1943. All salvageable materials, including guns and her superstructure, were stripped by 1946 while she was in drydock at Pearl Harbor. She was formally decommissioned on 1 September 1944. To clear the berth, the hulk was towed away in May 1947 for breaking up in San Francisco by Moore Drydock Co of Oakland, but during the tow from Hawaii a storm on 17 May caused the former battleship to sink about 500 miles from Hawaii. Her precise location remains unknown.



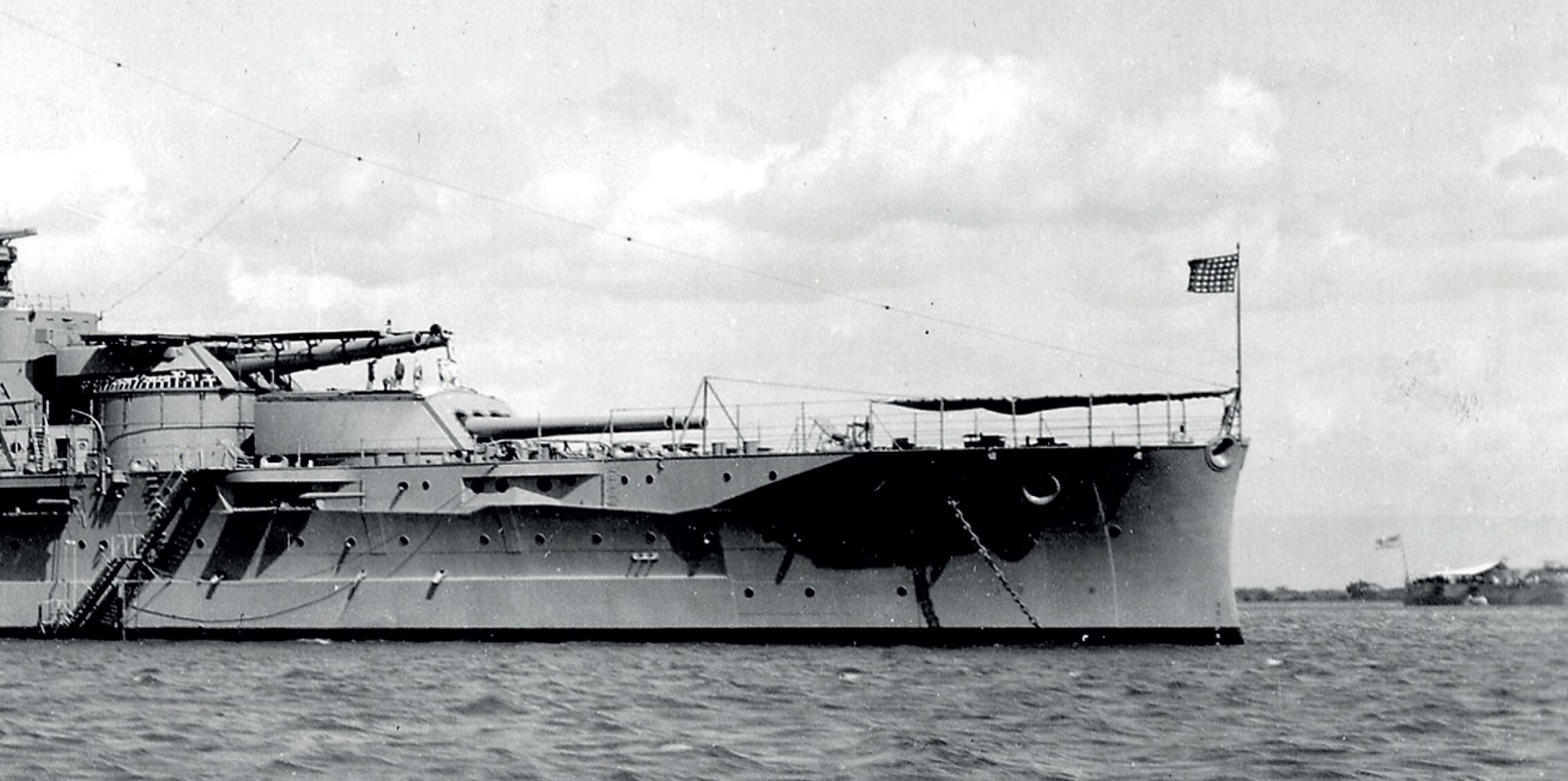


▼ USS Oklahoma (BB-37) Guantanamo Bay, Cuba, on 1 January 1920. Note aircraft flying-off platforms atop the second and third main gun turrets.

▲ USS Oklahoma off the Philadelphia Navy Yard, Pennsylvania, on 21 August 1929, following completion of the modernisation work.

▲▲ (left) USS Oklahoma firing her main battery guns during exercises in the early 1920s. USS Nevada (BB-36) is the next battleship.

▲▲ (right) The capsized USS Oklahoma being parbuckled during salvage operations at Pearl Harbor on 8 March 1943.



14 PENNSYLVANIA CLASS

The Pennsylvania class battleships were a pair of powerful capital ships built during the early 20th century. Displacing approximately 32,000 tons at full load, they measured 608ft in length, with a beam of 97ft and a draught of 29ft 3in. Propulsion was provided by 12 water-tube boilers driving turbines that produced 29,366shp, giving the ships a top speed of about 21 knots. Originally designed to carry a crew of 1,087, this number

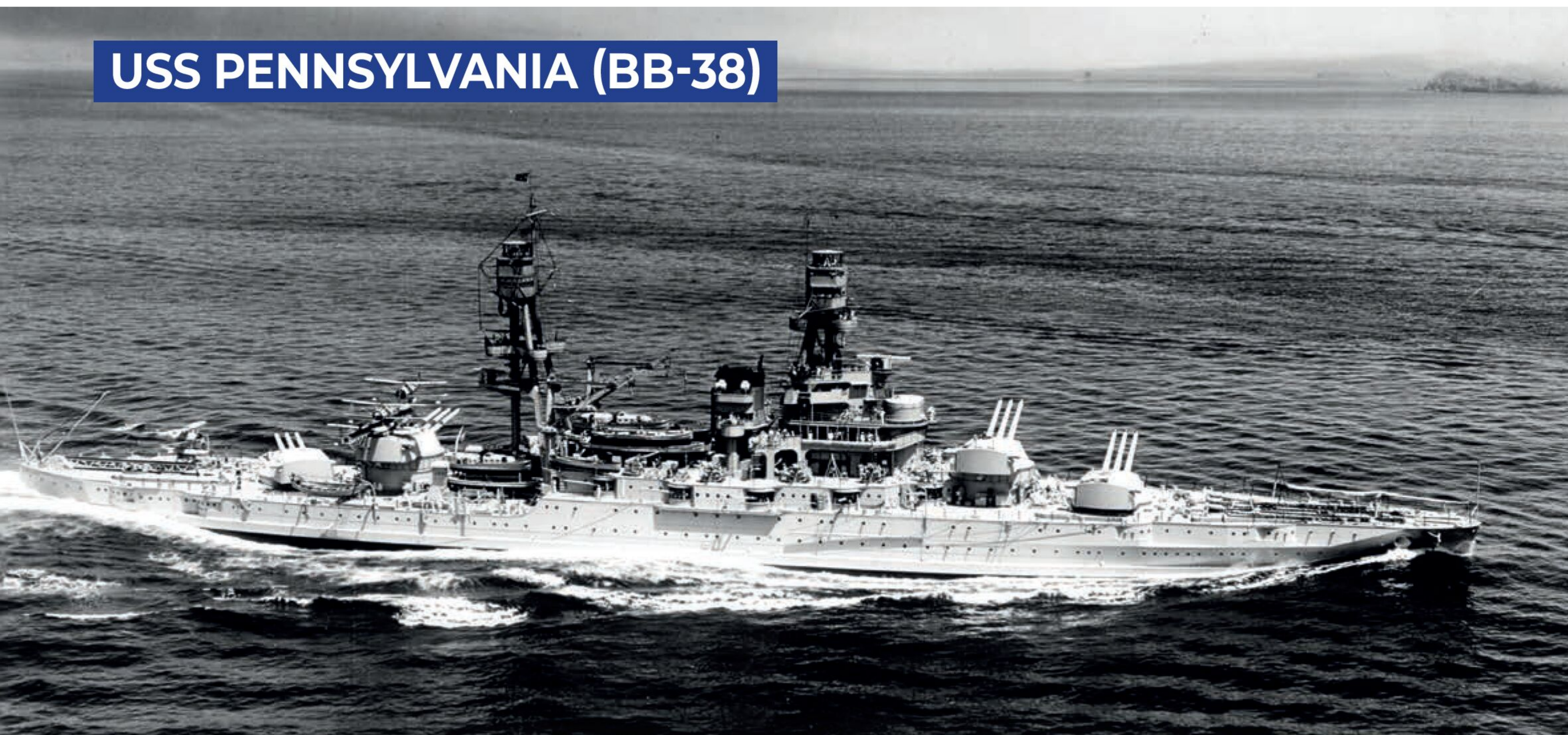
increased to 1,358 by 1931; at the time of USS *Arizona*'s loss in 1941, 1,512 personnel were aboard.

The ships' main armament featured four triple 14-inch gun turrets, two forward and two aft, giving them formidable firepower for their era. This was complemented by a secondary battery of 22 single 5-inch guns, four three-inch anti-aircraft guns, and two submerged 21-inch torpedo tubes. These

ships emphasized heavy armour and concentrated gun power.

Commissioned during World War I, the Pennsylvania class ships served the US Navy throughout the inter-war years and into World War II. USS *Arizona* tragically became one of the most iconic losses of the Pearl Harbor attack in December 1941, while USS *Pennsylvania* continued to serve in the Pacific theatre until the war's end.

USS PENNSYLVANIA (BB-38)



BUILDER Newport News Shipbuilding and Drydock Co

DISPLACEMENT 32,567 tons full load

ARMAMENT 12 x 14-inch (356mm), 22 x 5-inch (127mm), 4 x 3-inch (76mm) 2 x 21-inch (533mm) torpedo tubes

COMPLETED 12 June 1916

FATE Scuttled 10 February 1948 after atomic bomb tests

.....
USS *Pennsylvania* was constructed at Newport News Shipbuilding and was commissioned on 12 June 1916. Serving as the flagship of the Atlantic Fleet, she conducted operations primarily along the eastern seaboard of the United States and into the Caribbean. In December 1918 she crossed the Atlantic for a brief visit to

France before becoming part of the new Pacific Battlefleet. Over the next eight years she exercised in the Atlantic, Caribbean and Pacific with one notable cruise to Australia and New Zealand in 1925.

Between June 1929 and May 1931 she was at Philadelphia Navy Yard for a refit that resulted in her profile being completely altered with the addition of new tripod masts and an enhanced armoured conning tower.

Pennsylvania was spared major damage during the Pearl Harbor attack as she was in dry dock, so was protected from torpedoes. Once repaired, she was one of the first American battleships to adopt a war footing against Japan.

She was ordered to operate

close to America's West Coast and off Hawaii to protect against invasion by Japanese forces. When this never materialised, *Pennsylvania* was given another refit in October 1942 which saw the installation of extra anti-aircraft guns. She was then deployed to Alaskan waters for the recapture of the island of Attu and the engagements with Japanese forces at Kiska.

Pennsylvania provided gunfire support during the invasions of Makin Island in the Gilbert Islands and Kwajalein and Eniwetok. She bombarded defending forces ashore during the US Marine-led invasions of Saipan, Tinian and Guam before being involved in the Battle of Surigao Strait on 25 October 1944, during which the Japanese

fleet was largely destroyed.

In 1945 *Pennsylvania* took part in the Battle of Leyte Gulf and the invasion of Lingayen Gulf, but prior to the invasion of the island of Okinawa she was struck on 12 August 1945 by an air-dropped Japanese torpedo.

With a plentiful supply of modern warships, the US Navy declared USS *Pennsylvania* too old to be upgraded and she was placed in reserve. She was then expended as a target for atomic bomb tests being conducted under Operation Crossroads at Bikini Atoll in the Pacific. She survived both the Able and Baker blasts, but her battered hull was highly radioactive, the effects of which were studied by scientists at Kwajalein, before the hulk was scuttled on 19 February 1948.

USS ARIZONA (BB-39)

BUILDER New York Navy Yard

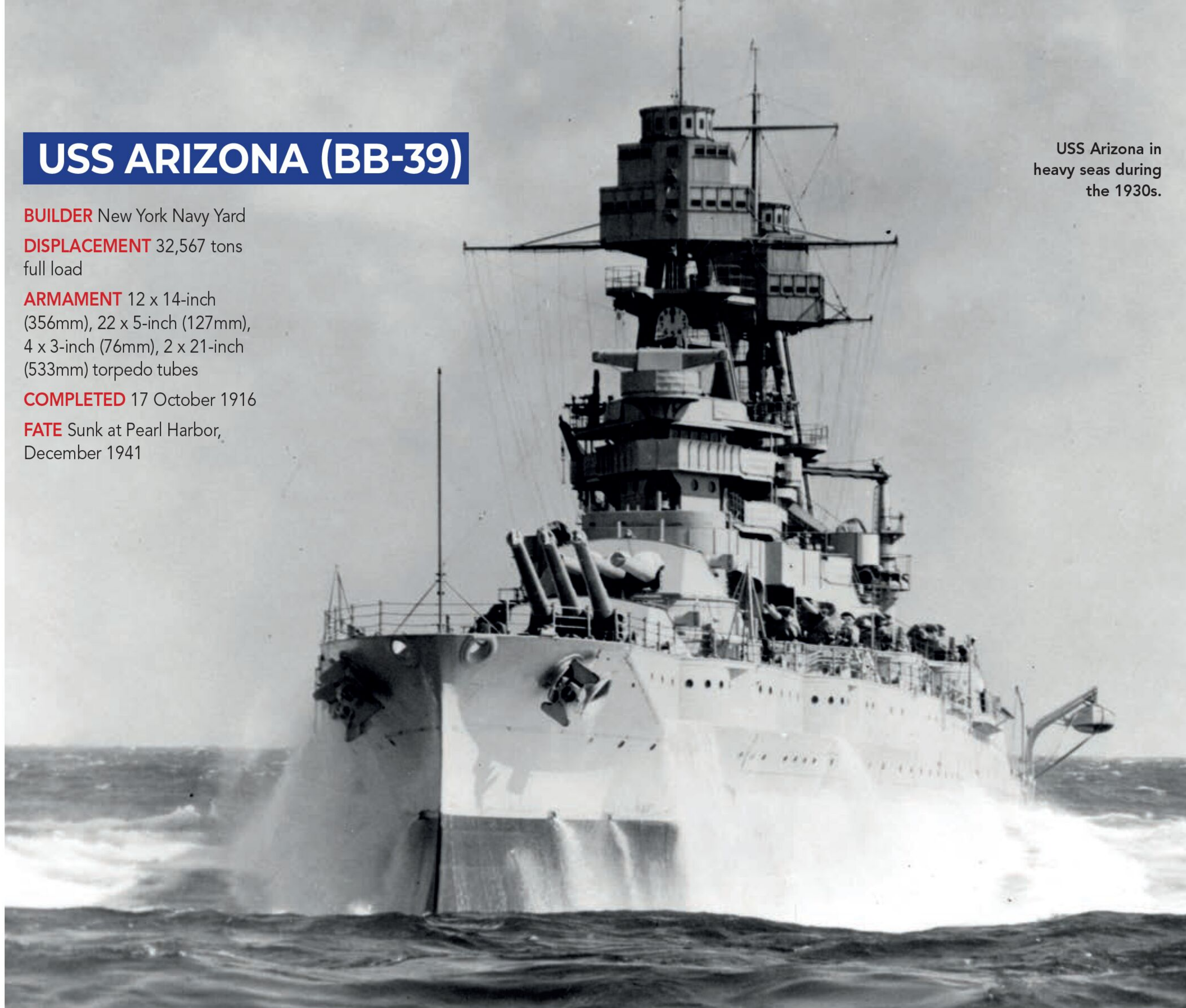
DISPLACEMENT 32,567 tons
full load

ARMAMENT 12 x 14-inch
(356mm), 22 x 5-inch (127mm),
4 x 3-inch (76mm), 2 x 21-inch
(533mm) torpedo tubes

COMPLETED 17 October 1916

FATE Sunk at Pearl Harbor,
December 1941

USS Arizona in
heavy seas during
the 1930s.



USS Arizona, the second Pennsylvania class battleship, is, arguably, the most famous American battleship of all time and also the most tragic. Her construction was authorised on 4 March 1913, the first steel was laid at the Brooklyn Navy Yard on 16 March 1914 and she was launched on 19 June 1915. She was commissioned on 17 October 1916.

She played only a minor role during World War I, serving as a gunnery training ship. In the inter-war years Arizona underwent a major two-year modernisation between January 1929 and March 1931. The upgrade saw the installation of new tripod masts, alterations and additions to her armament and extra berths for an increased size of crew. In 1935 Arizona was laid up for two years due to budget constraints.

She was modernised again between 1940 and 1941 at

Puget Sound Navy Yard. On 22 October 1941, during fleet exercises in the Pacific Ocean with the battleships Nevada and Oklahoma, Arizona collided with Oklahoma. Damage was slight and there were no injuries, but both battleships needed to be dry docked for repairs.

On 7 December 1941 USS Arizona and the battleships of the Pacific Fleet were at their berths in Pearl Harbor when Japanese aircraft attacked in what President Roosevelt later described as a 'dastardly attack', with the first wave of the assault starting at around 07.55. A near-miss off the port bow caused observers to believe that the ship had been torpedoed, but no torpedo damage was found. The most critical hit occurred when a bomb struck near turret number two, penetrated the battleship's deck and exploded near her magazines, causing a chain reaction that

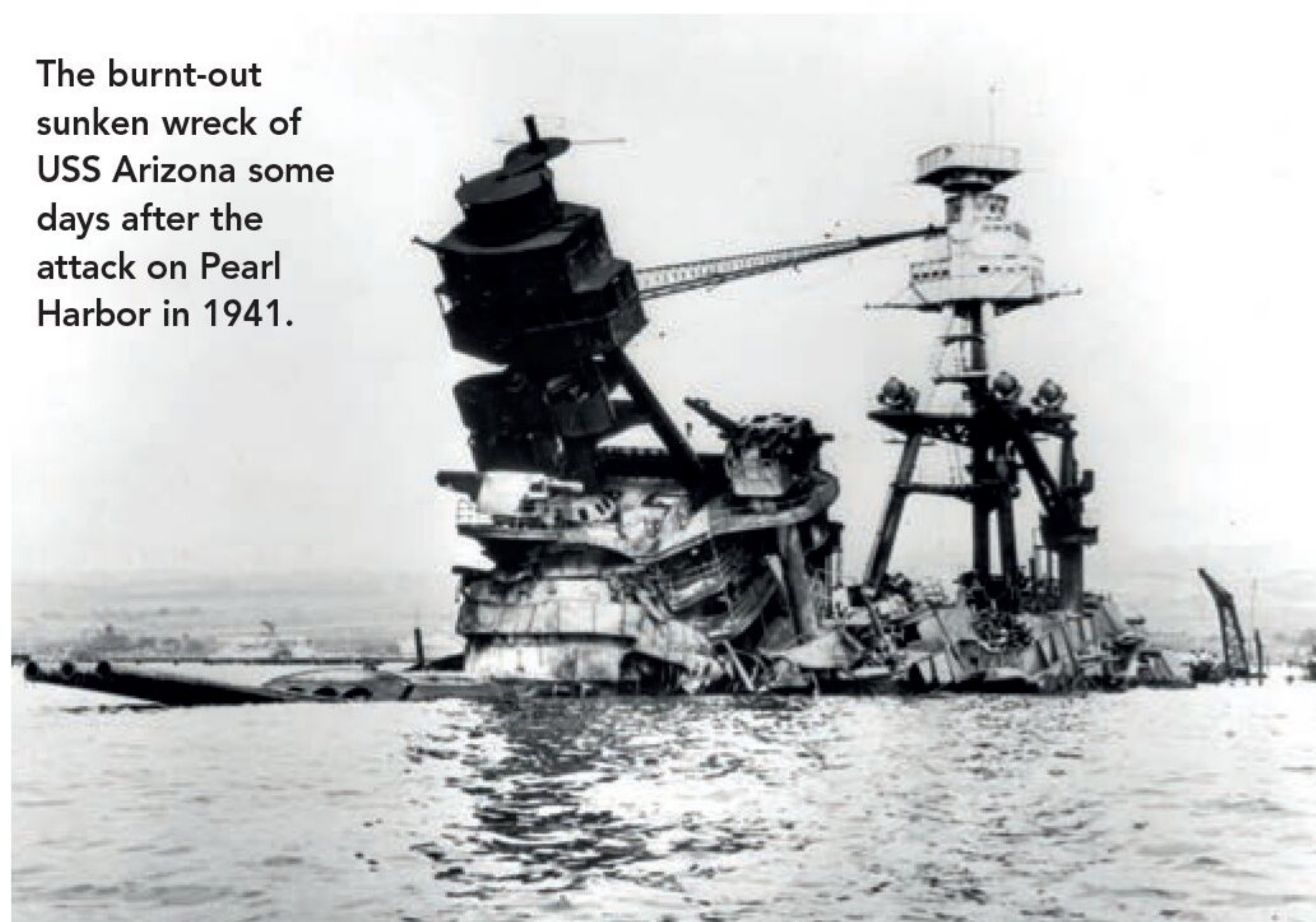
ripped through the entire ship.

A huge explosion then tore the ship apart; 1,177 out of 1,512 crew died in the tragedy. While other battleships were raised and refitted, the damage to Arizona was unrepairable and she was left where she had settled on the soft mud of Pearl Harbor.

Over the years any upperworks

that appeared above the waterline were removed until only the hull remained. A viewing platform was erected over the wreck and in 1962 it was designated a national shrine. On 15 October 1966 Arizona was listed on the National Register of Historic Places and on 5 May 1989 was designated a National Landmark.

The burnt-out
sunken wreck of
USS Arizona some
days after the
attack on Pearl
Harbor in 1941.



15 NEW MEXICO CLASS

The New Mexico class battleships emerged from early 1913-14 US Navy planning that initially called for an entirely new design of roughly 35,000 tons and armed with ten 16-inch guns in five turrets, a significant jump in firepower for the era. This ambitious proposal was ultimately curtailed when Secretary of the Navy Josephus Daniels rejected any major increase in displacement, forcing the Navy to abandon the 16-inch concept and instead develop a slightly modified repeat of the preceding Pennsylvania class.

As completed, USS *New Mexico* (BB-40), USS *Mississippi* (BB-41) and USS *Idaho*

(BB-42) retained the Pennsylvania-style battery of 12 14-inch/50 guns in four triple turrets, rather than the proposed 16-inch arrangement. Despite improvements, such as a clipper bow for better seakeeping and revised secondary battery placement, the New Mexico class still suffered from the same persistent issues with wetness forward, and many casemate-mounted guns remained largely unusable in heavy seas.

A notable innovation was introduced aboard the lead ship, USS *New Mexico*, in the form of an experimental turbo-electric propulsion system, making her the first

US battleship to employ such a drive. Although conceptually promising, offering smooth power control and simplified machinery layout, the system proved less successful in service and was ultimately replaced with a conventional geared steam-turbine arrangement.

Commissioned between 1917 and 1919, the three New Mexico class ships served extensively throughout the interwar period and during World War II. Though conceived under political and design constraints, the class ultimately became a durable and heavily modernised element of the US battle line.

USS NEW MEXICO (BB-40)

BUILDER New York Navy Yard

DISPLACEMENT 33,000 tons full load

ARMAMENT 12 x 14-inch (356mm), 14 x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 20 May 1918

FATE Scrapped 1947

USS *New Mexico* was constructed at the New York Navy Yard in Brooklyn, one of the US Navy's primary East Coast shipbuilding facilities. Her keel was laid on 14 October 1915, marking the formal beginning of her construction. On 23 April 1917 she was launched and she was commissioned into the US Navy on 20 May 1918, joining the fleet as one of the most modern American battleships of the era.

Built too late to serve during World War I, she did, however, escort for the liner *George Washington* which transported American President Woodrow Wilson to the Versailles Peace Conference in January 1919.

In the inter-war years the battleship operated across the world, venturing as far afield as Australia, New Zealand and South America. Between March 1931 and January 1933 she received a major modernisation during which her troublesome turbo-electric propulsion was replaced by a more conventional Curtis geared turbine

arrangement.

Just prior to the outbreak of war with Japan, USS *New Mexico* transferred from the Pacific Fleet to the Atlantic Fleet and supported the Neutrality Patrol escorting American and neutral-flagged ships across the North Atlantic. Following the Japanese attack on Pearl Harbor *New Mexico* was repositioned to the Pacific to bolster US Navy forces in the region. En route, however, on 10 December 1941, *New Mexico* accidentally rammed and sank the US freighter *Oregon* south of Nantucket Lightship.

In the Pacific USS *New Mexico* had a short refit at Puget Sound Navy Yard during which four of her 12 five-inch secondary guns were replaced by numerous anti-aircraft guns. The battleship was one of several that took part in the Aleutian Islands Campaign which ejected Japanese forces from the Attu and Kiska islands off Alaska in late 1942 and early 1943.

Following this success *New Mexico* went on to have one of the most active wartime careers of any American battleship, seeing action at Makin Atoll, the Gilbert Islands, Kwajalein, Ebeye, New Ireland, Kavieng, the Battle of the Philippine Sea and off Lingayen Gulf, where she was hit by a kamikaze suicide attack that killed her commanding officer, Captain Robert Walton Fleming, and 29 others when the aircraft struck the ship's bridge. British

USS *New Mexico*'s 5/25 battery prepares to fire during the bombardment of Saipan, 15 June 1944. Time-fuse setters stand on the left side of each gun mount, each holding three fixed rounds of ammunition.



officer Lieut General Herbert Lumsden, was also killed.

Following repairs, the battleship continued to operate with Task Force 54 as US forces invaded Okinawa. On 12 May 1945 two kamikaze planes attacked the ship, one hitting squarely, the other being deflected, but the bomb it carried exploded and in total 54 sailors were killed and another 119 critically injured.

Following Japan's surrender,

USS *New Mexico* was one of the ships assigned to the occupation forces before sailing for home on 9 September and arriving at Boston on 17 October. The battleship's career came to an end on 19 July 1946, when she was decommissioned and seven months later, on 25 February 1947, she was struck from the Naval Vessel Register.

USS *New Mexico* was sold for \$381,600 to the Lipsett Division of Luria Bros, who had been

involved in the demolition of several similar battleships, but the company had chosen Newark, New Jersey as the preferred location for the work.

New Mexico was towed away on 12 November 1947, but on passage a storm blew up and the tugs let go the tow lines, leaving the battleship to drift until she was found the next day 35 miles off the coast

by the US Coast Guard. Once back under tow, the battleship recommenced her passage to Newark, only to find the city opposed to the demolition taking place along Newark seafront, where plans had been put in place to beautify the area and the work of dismantling redundant battleships was not part of the plan.

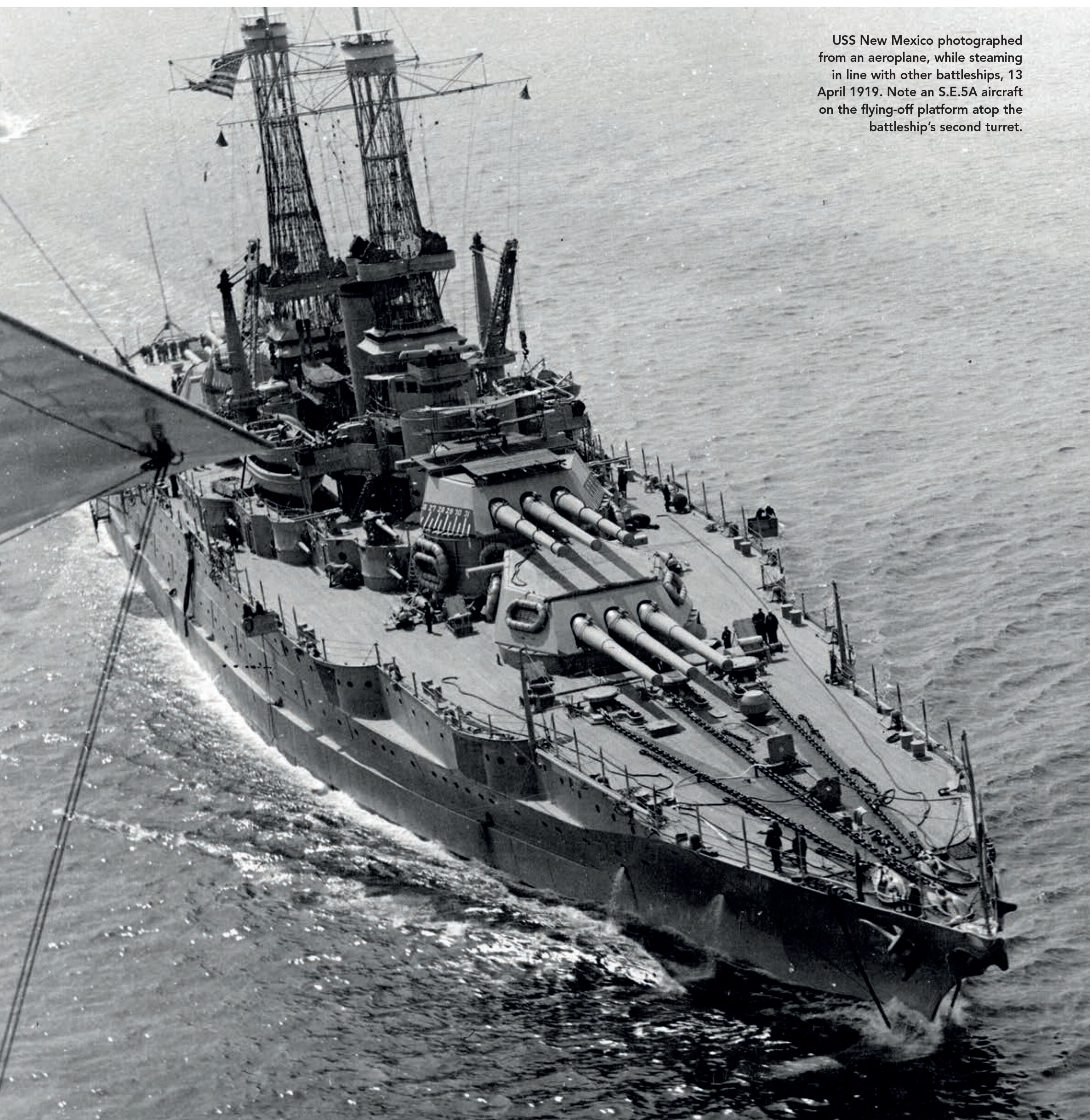
Such was the local opposition

to New Mexico's arrival that two city fireboats, Michael P. Duffy and William T. Brennan, were used to block the battleship's entry. Eventually the US Coast Guard guaranteed the battleship's safe arrival at Newark in what became known as 'the Battle of Newark Bay'.

The row went to the Federal Government, with the US Navy Under Secretary negotiating a

deal whereby USS New Mexico, USS Idaho and USS Wyoming would be scrapped at Newark and then shipbreaking in the city would end. The shipbreakers had only nine months to dismantle the three former battleships. USS New Mexico finally arrived for demolition on 19 November, and work began five days later. It was completed by July 1948.

USS New Mexico photographed from an aeroplane, while steaming in line with other battleships, 13 April 1919. Note an S.E.5A aircraft on the flying-off platform atop the battleship's second turret.



USS MISSISSIPPI (BB-41)

BUILDER Newport News Shipbuilding

DISPLACEMENT 33,000 tons full load

ARMAMENT 12 x 14-inch (356mm), 14x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 18 December 1917

FATE Scrapped 1956 after many years in reserve

Construction of USS Mississippi began at Newport News Shipbuilding on 5 April 1915 when the first steel components were arranged on the slipway. On 25 January 1917 the ship was launched. She would, following final fitting out, be completed and commissioned into the US Navy on 18 December 1917, too late for active service in World War I.

In January 1919 Mississippi was used as a trials ship for the evaluation of naval aircraft. She had a platform fitted atop her forward super-firing turret. In February 1923 she was given the task of firing on, and sinking, the former USS Iowa (Coast Battleship No.4).

The following year the battleship was the scene of a series of tragic accidents, on 12 June 1924, when Turret No.2 exploded, killing 44 members of her crew, while the ship was operating off San Pedro. The battleship made for port for repairs, where gunpowder still in Gun No.5 exploded and killed a further four men. Once repaired USS Mississippi returned to service and, during the interwar years, operated mostly in the Caribbean and Pacific, having been modernised in 1931.

In May 1941 following continued attacks on American shipping during the Battle of the Atlantic the US Navy established the Neutrality Patrols and Mississippi was one of the battleships assigned to protect US commercial shipping. Following the attack on Pearl Harbor, however, Mississippi transferred to the Pacific and took part in the Aleutian Islands Campaign of July 1943.

Throughout the American campaign in the Pacific the battleship's big guns were used on heavily

defended Japanese outposts and installations, including at Kwajalein, Makin Island, Peleliu and during the Battle of Leyte Gulf and the Battle of Surigao Strait.

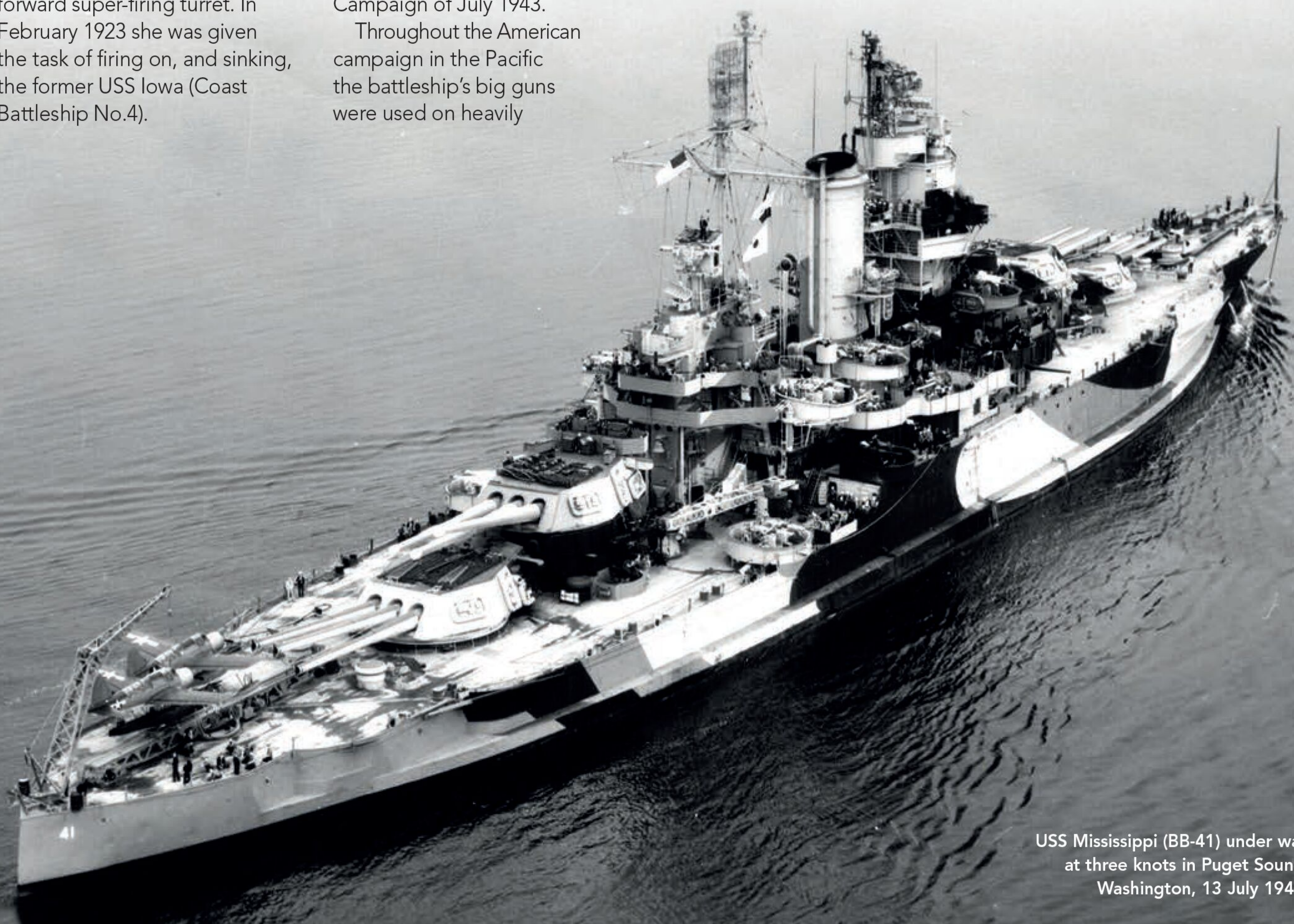
On 6 January 1945 the battleship was struck by a kamikaze suicide plane but remained operational. Repaired at Pearl Harbor, USS Mississippi returned for the closing stages of the Pacific War, becoming part of the Allied occupation forces on the island of Honshu. She was also present in Tokyo Bay for the official surrender of all Japanese forces in the Pacific.

USS Mississippi, unlike most other US Navy battleships, had a short but interesting post-war career. After the conflict, she was converted into a gunnery training ship and was given the hull number AG-128 on 15 February 1946. In this guise she lost her No.1 turret, which was replaced with a twin six-inch turret similar to that found on Worcester class

light cruisers. Turrets No.2 and No.3 were removed completely and No.4 was retained, but its guns were replaced by smaller twin five-inch and three-inch guns.

The conversion took place at Norfolk Naval Shipyard and took three years, from November 1945 to April 1948. On her return to service, she replaced the old USS Wyoming as an anti-aircraft training ship. The old battleship was then given a pair of new RIM-2 Terrier anti-aircraft missile launchers, added in 1952 when No.4 turret was removed.

This was a trial fit and the first at-sea firings of the new missile took place on 28-29 January 1953 off Cape Cod. She continued to trial new weapon systems, including the new radar homing Petrel missile, until she was decommissioned at Norfolk Navy Yard on 17 September 1956. She was subsequently sold for scrapping by Bethlehem Steel on 28 November 1956.



USS Mississippi (BB-41) under way at three knots in Puget Sound, Washington, 13 July 1944.

USS IDADO (BB-42)

USS Idaho (BB-42) in 1934, following modernisation work which saw the removal of the 'cage' masts, replaced by a tower superstructure supporting up-to-date gunfire controls.



BUILDER New York Shipbuilding

DISPLACEMENT 33,000 tons full load

ARMAMENT 12 x 14-inch (356mm), 14 x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 24 March 1919

FATE Scrapped 1947

USS Idaho was built by New York Shipbuilding Corp with the keel being laid on 20 January 1915. Idaho was launched on 30 June 1917 and commissioned into service on 24 March 1919. On her passage to join the Pacific Fleet she welcomed the Brazilian President Epitácio Pessoa who took passage on her as far as Rio de Janeiro.

Until her three-year reconstruction commenced on 7 September 1931, Idaho performed peacetime duties in the Pacific with occasional cruises as far afield as New Zealand and Australia, and also operated occasionally in the Caribbean. The reconstruction carried out at Norfolk Navy Yard in the early 1930s remodelled her profile completely: gone were the two lattice masts and in their place was a completely new superstructure and a taller funnel.

On completion of the work, Idaho returned to the Pacific Fleet in which she served for the rest of the pre-war years until mid-1940. That year President Franklin Roosevelt initiated

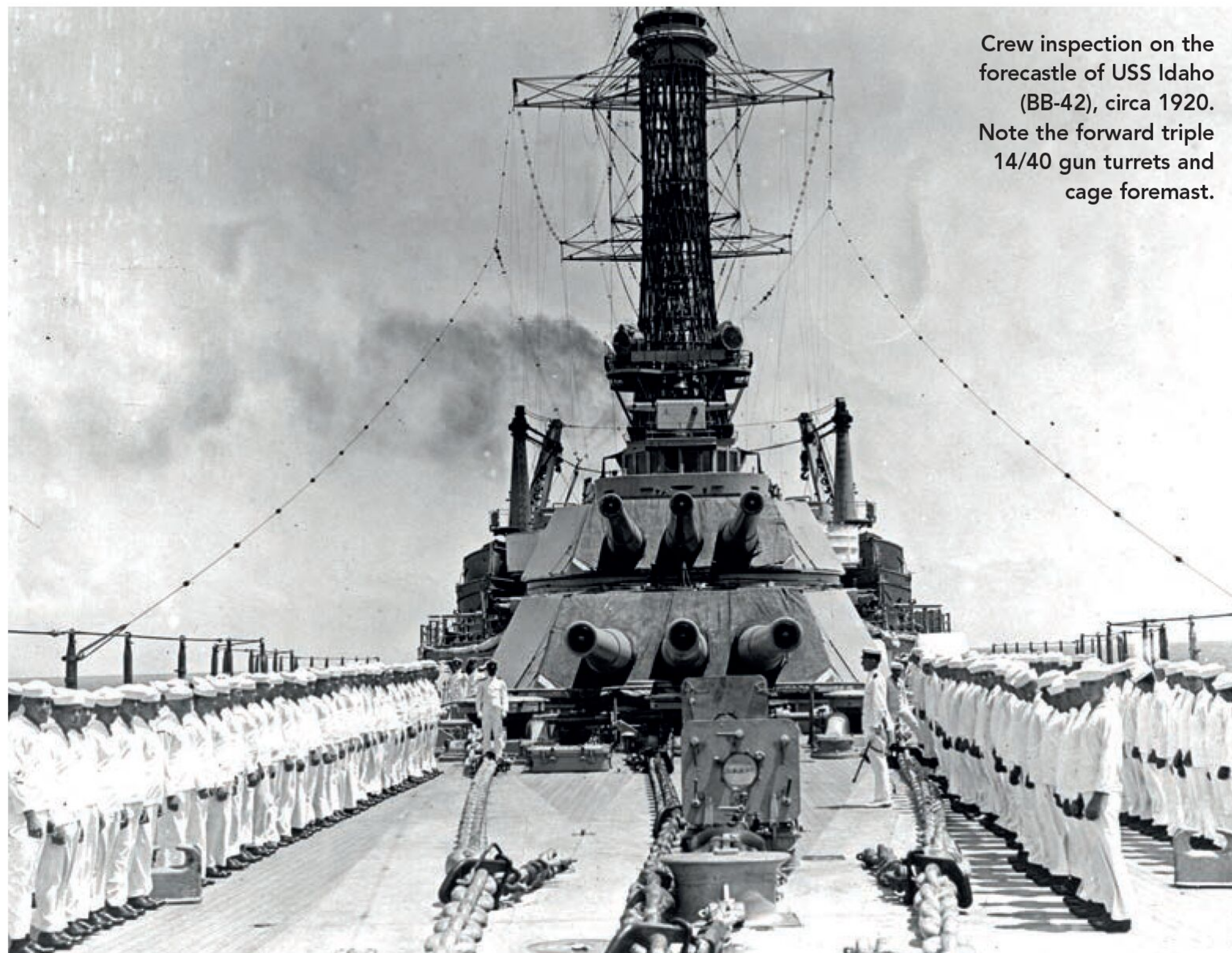
neutrality patrols in the North Atlantic and Idaho was one of the battleships assigned to the task of protecting neutral shipping. She was stationed in Iceland when America entered World War II in 1941.

USS Idaho was one of the Atlantic Fleet's battleships transferred to the Pacific to replace losses incurred at Pearl Harbor and her first active service in the war was during the Aleutian Islands Campaign,

in which she assisted in ousting Japanese forces from the islands of Kiska and Attu. Following a short refit, the battleship then took part in the attacks on the Gilbert Islands, Makin Atoll, the Marshall Islands and New Hebrides, as well as the Battle of the Philippine Sea.

USS Idaho supported the invasions of Guadalcanal and Peleliu and, following a stateside refit, she bombarded the beaches of Iwo Jima while coming under

kamikaze attacks, surviving one near miss. Following the detonation of the two atomic bombs and the Japanese surrender, Idaho sailed into Tokyo Bay on 27 August 1945 to land Allied occupation forces. Just over a week later she sailed for the United States and was placed in reserve. Idaho decommissioned on 3 July 1946 and was sold for breaking on 24 November 1947 to Lipsett Inc, of New York City.



Crew inspection on the foredeck of USS Idaho (BB-42), circa 1920. Note the forward triple 14/40 gun turrets and cage foremast.

16 TENNESSEE CLASS

The Tennessee class battleships, consisting of USS *Tennessee* (BB-43) and USS *California* (BB-44), represented a steady evolutionary step in US Navy warship design. Like the American battleship classes that came before, they were not radical departures but refinements intended to enhance survivability, firepower and overall combat effectiveness.

A major focus of the class was on improved underwater protection. Their designers incorporated greater subdivision of internal compartments than on earlier

ships, creating a layered defensive scheme intended to limit flooding and preserve buoyancy if the hull was breached. This system was reinforced by multiple void spaces along the sides of the ship, which were expected to absorb or dissipate the force of torpedo detonations.

The machinery spaces also benefited from this philosophy of compartmentalisation. By dividing engineering areas into smaller, isolated sections, the Navy aimed to ensure that damage to one part of the propulsion

system would not cripple the entire ship.

In terms of offensive capability, the Tennessee class retained the twelve 14-inch guns of their predecessors but gained a significant improvement in range with these weapons. Their main battery guns were engineered to elevate to 30 degrees, allowing the ships to engage targets at far greater distances than those of earlier US battleships. Together, these enhancements made the Tennessee class among the most resilient and capable American capital ships of their era.

USS TENNESSEE (BB-43)

BUILDER New York Navy Yard

DISPLACEMENT 33,190 tons full load

ARMAMENT 12 x 14-inch (356mm), 14 x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 3 June 1920

FATE Sold for breaking up 1959

USS Tennessee was another victim of the Japanese attack on Pearl Harbor on 7 December 1941, but for 20 years previously she had patrolled the Pacific in peace. Built by New York Naval Shipyard between her laying down on 14 May 1917 and her commissioning on 3 June 1920, the battleship conducted several long cruises during the 1920s, including one in 1925 to Australia and New Zealand before being rebuilt to a more modern design in the early 1930s.

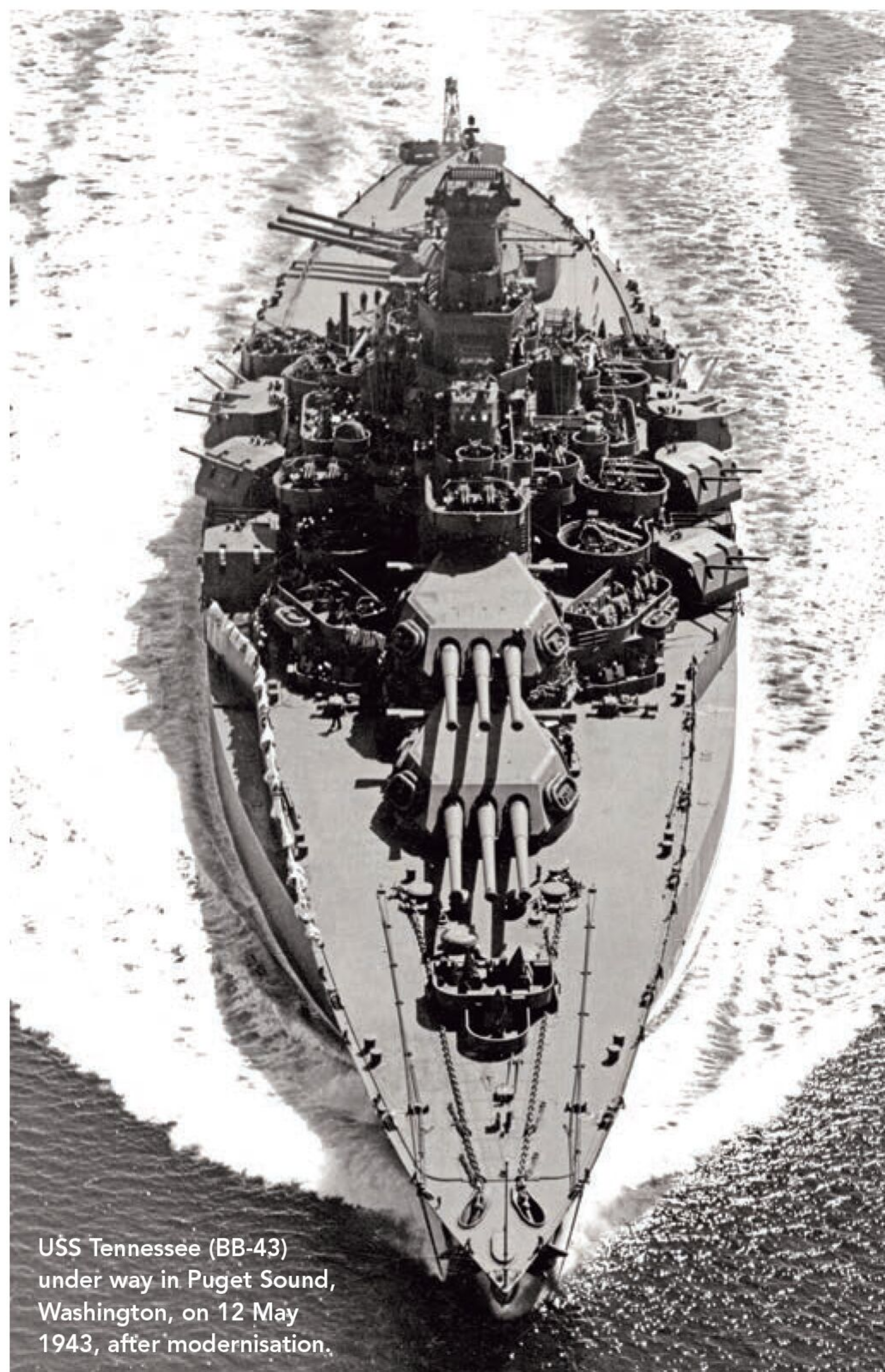
After the attack on Pearl Harbor, USS Tennessee was left as one of the least damaged of the American battleships. Having been moored inboard of USS West Virginia, she was shielded from the worst effects of the Japanese torpedoes, but was hit by two naval shells reconfigured as aerial bombs. Neither properly detonated although both caused damage to two of the battleship's main turrets. The risk of fires onboard meant that the ship's magazines were flooded as she had been showered with flaming fuel oil from the exploding USS Arizona, which set her stern ablaze.

The limited but still significant amount of damage had to be repaired for Tennessee to be brought back into service. This was done more speedily than with many of her contemporaries which had sunk around her, trapping the battleship at her berth. Repairs in 1942 at Puget Sound Naval Station brought her up to modern standards.

In 1943 she started her wartime campaign in the Pacific and eventually took part in the Aleutian Islands Campaign off Alaska, followed by the Gilbert and Marshall Islands, the Battles for Tarawa (where the battleship's five-inch secondary weapons scored hits on the Japanese submarine I-35), Kwajalein, Saipan, Guam, Tinian and Angaur.

During the American-Japanese naval encounter at the Battle of Leyte Gulf, USS Tennessee was one of the battleships to help achieve victory. This was followed by the Battles of Iwo Jima and Okinawa. On 12 April 1945, while she was off Okinawa, the battleship's signal bridge was struck by a kamikaze plane. The aircraft carried a 250lb bomb which exploded soon after impact, claiming the lives of 22 sailors and injuring another 107.

While the death toll was heavy, the damage inflicted to the ship was relatively minor, and she remained on station providing naval gunfire support to the US invasion forces heading towards the Japanese defended beaches. During the last months of World

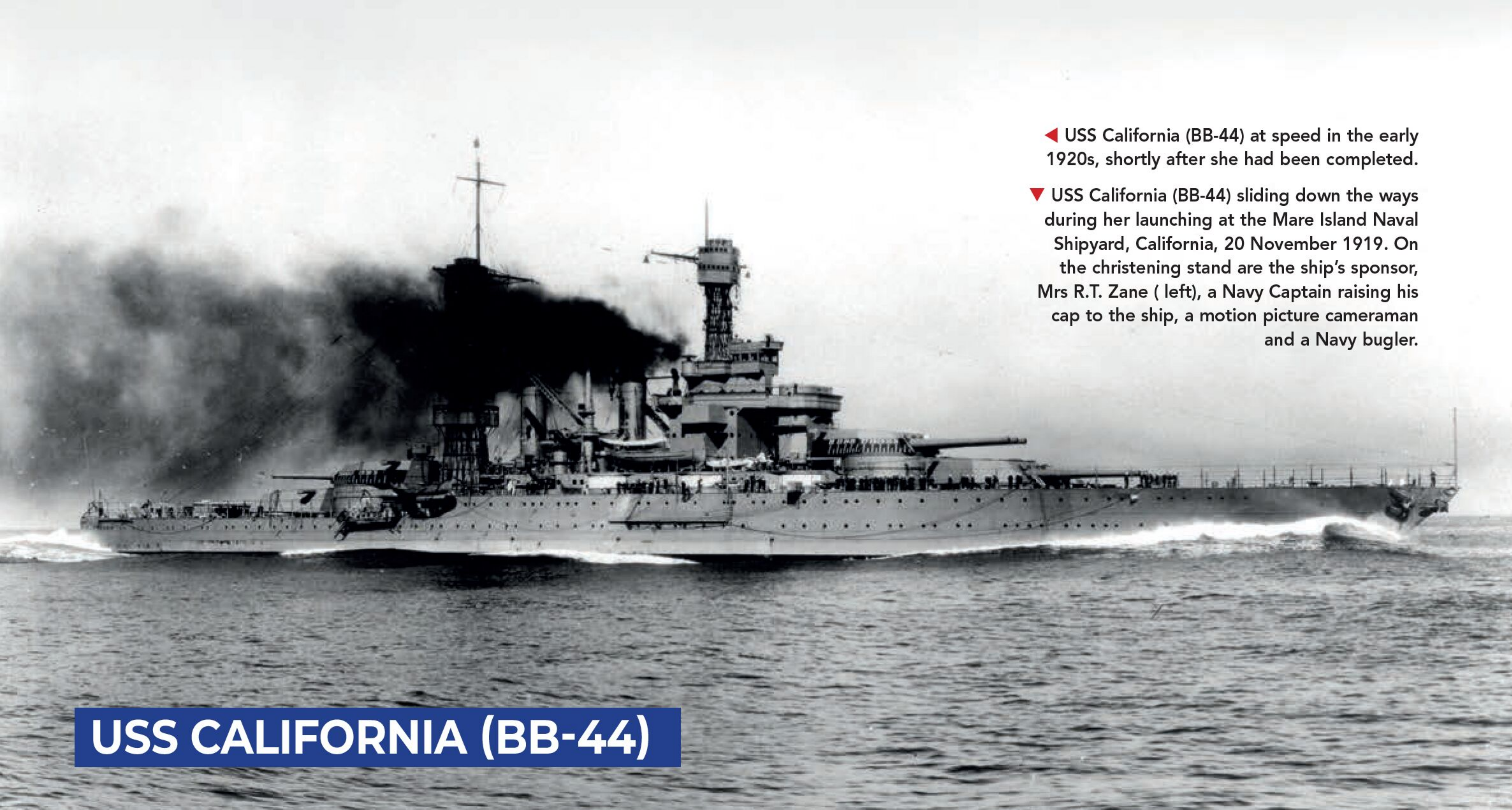


USS Tennessee (BB-43) under way in Puget Sound, Washington, on 12 May 1943, after modernisation.

War II the veteran battleship operated in the East China Sea. During the war she fired a total of 9,347 14-inch shells and 46,341 five-inch shells.

Following the capitulation of Japanese military forces, USS Tennessee formed part of the Allied forces of occupation, before returning to the United

States in late 1945. The following year she was decommissioned on 14 February 1947 at Philadelphia. Despite her age, the battleship was retained in the reserve fleet until as late as 1 March 1959, when she was declared surplus to requirements and sold for breaking up by Bethlehem Steel in Baltimore.



◀ USS California (BB-44) at speed in the early 1920s, shortly after she had been completed.

▼ USS California (BB-44) sliding down the ways during her launching at the Mare Island Naval Shipyard, California, 20 November 1919. On the christening stand are the ship's sponsor, Mrs R.T. Zane (left), a Navy Captain raising his cap to the ship, a motion picture cameraman and a Navy bugler.

USS CALIFORNIA (BB-44)

BUILDER Mare Island Naval Shipyard

DISPLACEMENT 33,190 tons
full load

ARMAMENT 12 x 14-inch (356mm),
14 x 5-inch (127mm), 4 x 3-inch
(76mm), 2 x 21-inch (533mm)
torpedo tubes

COMPLETED 10 August 1921

FATE Sold for breaking up 1959

Construction of USS California, one of the most famous American battleships, started in 1915 when the second Tennessee class ship was authorised by Congress. Outwardly, she differed little from the preceding New Mexico class and was armed with a battery of twelve 14-inch guns in four three barrel turrets, two forward and two aft. She was built by Mare Island Naval Shipyard in Vallejo, California with the first steel plates being laid on 25 October 1916.

As America entered World War I work on the battleship slowed as war priorities shifted. She was launched on 20 November 1919 and commissioned on 10 August 1921. She spent almost the whole of her career in the Pacific, often as flagship of the Pacific Fleet. As such, she spent the 1920s and 1930s showing the American flag around the Pacific. In the early 1930s she underwent a major reconstruction.

On 7 December 1941 USS California was one of the primary targets for the Japanese aircraft at Pearl Harbor. She was hit by two aerial torpedoes and three armour-piercing bombs. In total 104 men lost their lives and another 61 were wounded during the attack. She remained in the soft mud of Pearl Harbor until her hull was patched up and, with the water in her hull pumped out, she was refloated on 25 March 1942.

The damage was sufficient to require a major rebuild of the battleship with almost every compartment being refurbished. This work was undertaken at Puget Sound and lasted until January 1944. After the refit she emerged as a virtually brand new big-gun battleship capable of bringing the war to the Japanese and the notion of a great ship having risen, phoenix-like, from the ashes to seek revenge.

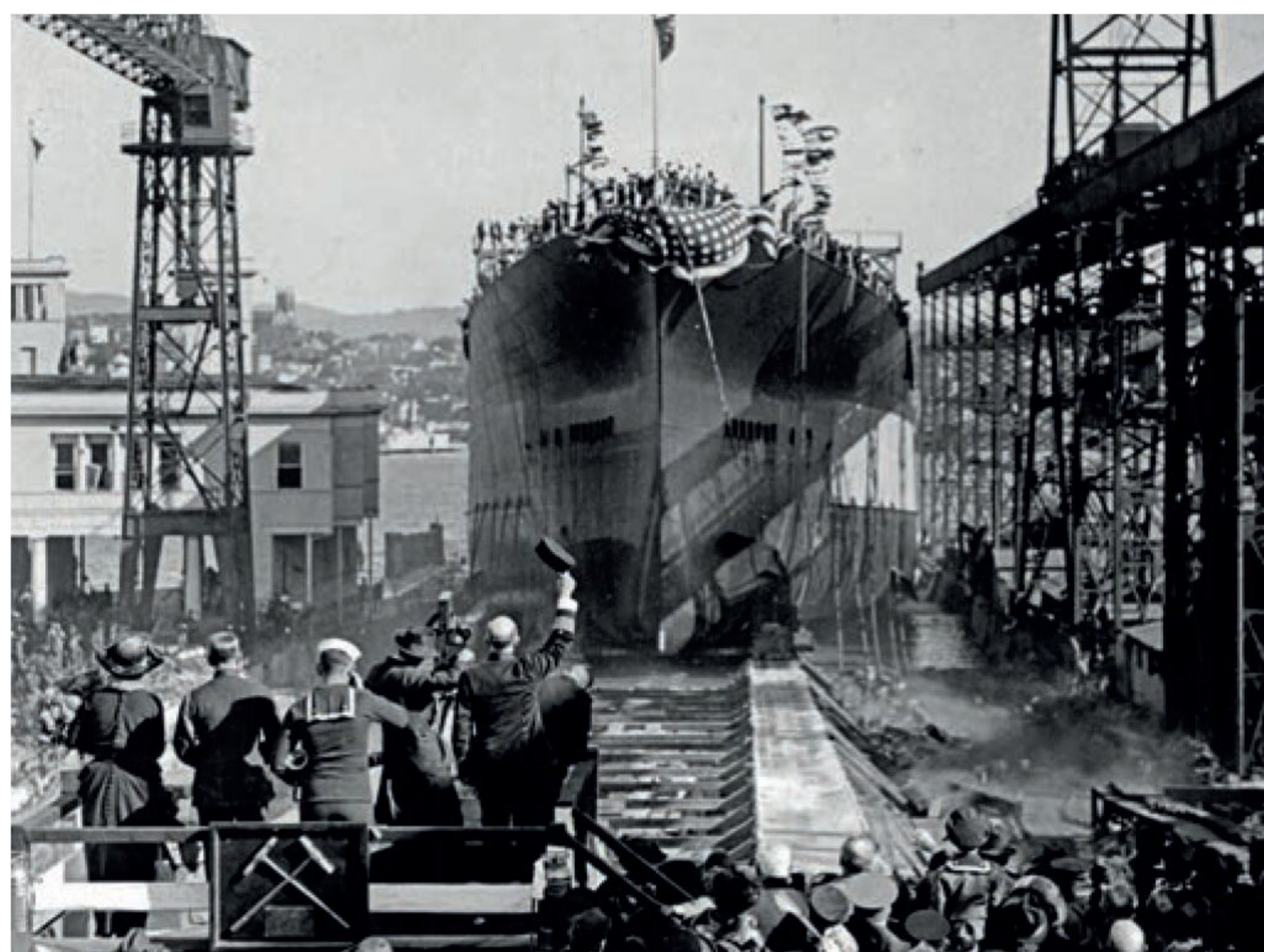
She was fitted with the latest fire control technology and 16 new five-inch/38-calibre dual purpose secondary guns and hundreds of 20mm and 40mm guns. California took part in dozens of amphibious operations in the Pacific, targeting her 14-inch guns against heavily defended and reinforced Japanese strongholds on islands such as Peleliu, Palau, Mariana,

Lingayen and Okinawa. She also played a crucial role in the Battle of Leyte Gulf against the battleships Yamashiro and Fuso, and at the Battles of Surigao Strait and Lingayen Gulf. During the latter encounter she was hit by a kamikaze plane which killed 44 sailors and injured another 155.

The crew of the veteran battleship had received news of Japan's surrender while she was anchored in San Pedro Bay in the Philippines. Following this, she was assigned to support the Allied occupation of Japan. In mid-October she set out on her return voyage to the United States, travelling by way of Singapore and Colombo. While in Ceylon (Sri Lanka), she

took on board a group of South African soldiers for repatriation, disembarking them at Cape Town.

USS California then continued northward into the South Atlantic and continued northward, stopping at Saint Helena and Ascension Island before finally reaching Philadelphia, where she entered the reserve fleet on 7 December 1946. Her crew was discharged within days. She was formally decommissioned on 14 February 1947, though she remained in reserve until 1 March 1959, when she was declared eligible for disposal. Bethlehem Shipbuilding Corporation purchased the ship on 10 July 1959 and undertook the task of breaking up the battleship.



17 COLORADO CLASS

The Colorado class of battleships represented the culmination of the Standard type design philosophy which had shaped US Navy capital ships through the 1910s and early 1920s. Intended to consist of four vessels, the class was essentially a repeat of the preceding Tennessee class, but introduced a major increase in firepower.

Instead of the Tennessees' triple 14-inch/50-calibre guns, the Colorado class ships mounted twin 16-inch/45-calibre guns, giving each ship a broadside

of eight heavy rifles. Although this appeared numerically inferior to the earlier 12-gun arrangements, the new 16-inch weapons delivered a far more formidable punch. Their 2,100lb shells were capable of penetrating 18.9 inches of armour at 12,000 yards, an impressive improvement over the 13.6-inch penetration achieved by the Tennessee and New Mexico classes.

Beyond their firepower, the Colorado class also had significantly expanded onboard electrical generation. This was crucial, as the 1920s saw rapid

growth in naval technologies, including advanced fire-control systems, improved communications, and increasingly complex auxiliary machinery. These developments placed substantial demands on a ship's power supply, and the Colorado class was designed to meet them.

Only three ships ultimately entered service. The fourth, USS *Washington*, was cancelled while it was nearly complete, a consequence of the Washington Naval Treaty's effort to limit battleship construction worldwide.

USS COLORADO (BB-45)

BUILDER New York Shipbuilding

DISPLACEMENT 33,590 tons full load

ARMAMENT 8 x 16-inch (406mm), 14 x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 30.08.1923

FATE Sold for breaking up 1959

USS Colorado was built by New York Shipbuilding, with her keel being laid on 29 May 1919. Colorado may have given her name to the class, but she was not the first to begin construction. On 22 March 1921

the hull was launched but she was not commissioned into service until 30 August 1923.

Later in the year she crossed the Atlantic, visiting Portsmouth, Cherbourg, Villefranche-sur-Mer and Naples before returning to the US. After a short refit she transferred from the Atlantic to the Pacific Fleet, where she remained for the next 15 years. On 1 May 1927 she ran aground off Cape Hatteras, North Carolina, but was refloated.

In 1928 an extensive two-year refit started, which saw her

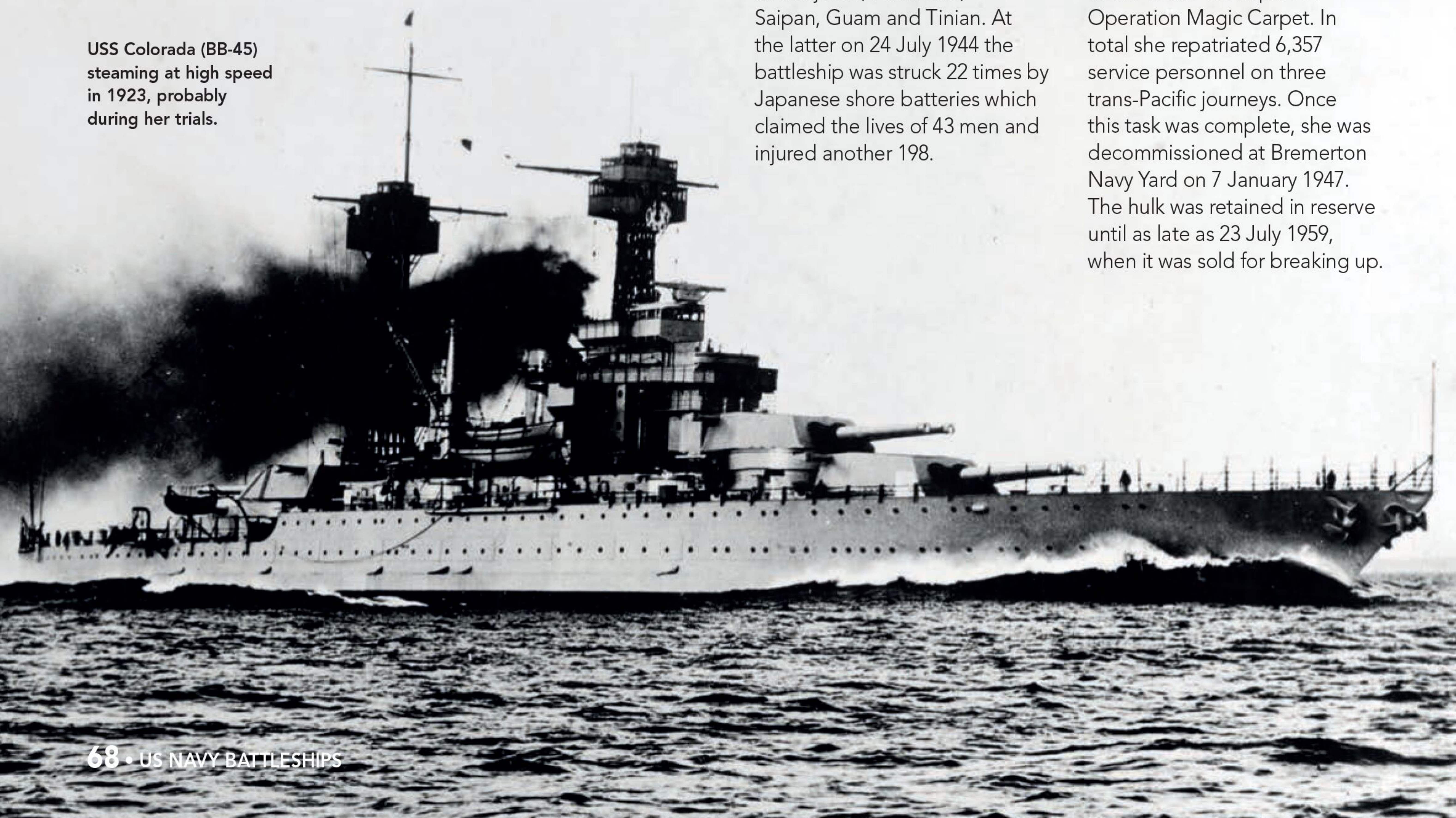
up-gunned with her obsolete three-inch secondary guns replaced by more powerful five-inch alternatives. The usefulness of battleships was proven in mid-March 1933 when, following a disastrous earthquake at Long Beach, California, the battleship and her crew rendered aid to those areas and people most effected by the quake.

USS Colorado was not at Pearl Harbor on 7 December 1941 but was ordered to patrol the West Coast to prevent any possible Japanese invasion. During World War II she played an active part in most of the major Pacific campaigns, including at Kwajalein, Eniwetok, Saipan, Guam and Tinian. At the latter on 24 July 1944 the battleship was struck 22 times by Japanese shore batteries which claimed the lives of 43 men and injured another 198.

After repairs, she returned to action only to be hit by a pair of kamikaze bombers (19 dead 72 injured). Further repairs were made at Manus Island. Her run of bad luck continued on New Year's Day 1945 when she was hit, while off Lingayen Gulf, by accidental gunfire that strafed the battleship's superstructure (69 dead, 51 wounded). USS Colorado ended the war shelling Japanese positions on the island of Okinawa before forming part of the naval force of occupation.

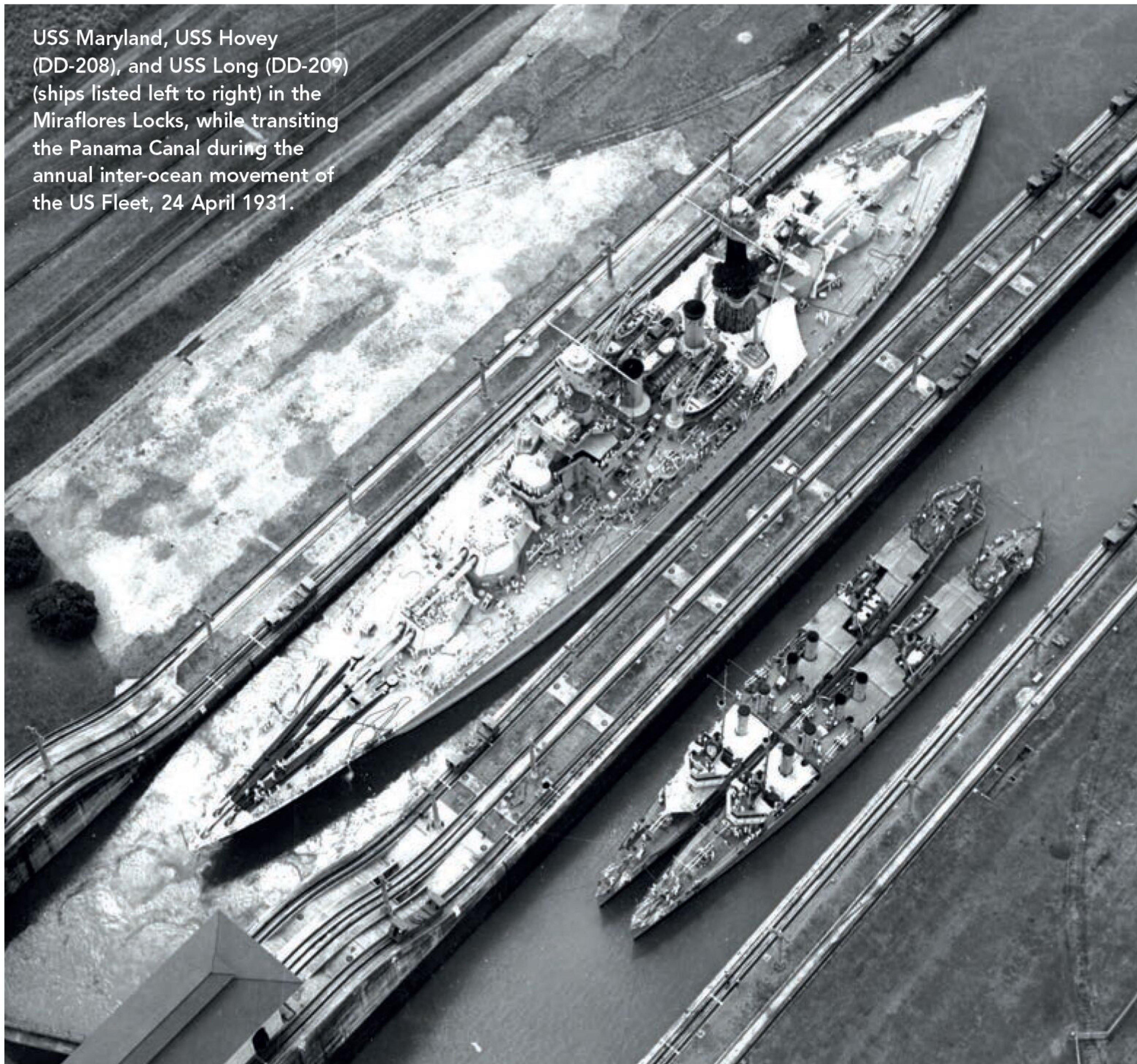
In the immediate aftermath of the fighting she was involved in transporting thousands of sailors, marines and soldiers home to the US as part of Operation Magic Carpet. In total she repatriated 6,357 service personnel on three trans-Pacific journeys. Once this task was complete, she was decommissioned at Bremerton Navy Yard on 7 January 1947. The hulk was retained in reserve until as late as 23 July 1959, when it was sold for breaking up.

USS Colorado (BB-45) steaming at high speed in 1923, probably during her trials.



USS MARYLAND (BB-46)

USS Maryland, USS Hovey (DD-208), and USS Long (DD-209) (ships listed left to right) in the Miraflores Locks, while transiting the Panama Canal during the annual inter-ocean movement of the US Fleet, 24 April 1931.



BUILDER Newport News Shipbuilding Company

DISPLACEMENT 33,590 tons full load

ARMAMENT 8 x 16-inch (406mm), 14 x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 21 July 1921

FATE Sold for breaking up 1959

Known affectionately as 'Old Mary' or 'Fighting Mary', USS Maryland was laid down at Newport News Shipbuilding Company on 24 April 1917. She was the first of the class to begin construction, two years ahead of USS Colorado. She was launched on 20 March 1920, and was handed over to the US Navy on 21 July 1921.

In 1925 the battleship transported the President elect, Herbert Hoover, on his tour of Latin America. Three years later

she entered refit, principally so that additional three-inch anti-aircraft guns could be fitted. In the 1930s she operated mostly in the Pacific, showing the flag.

USS Maryland was berthed at Battleship Row in Pearl Harbor on 7 December 1941 when Japanese aircraft attacked. She was berthed inboard of USS Oklahoma, which took most of the punishment. When Oklahoma capsized alongside Maryland, the lines connecting the two battleships were quickly cut.

Initially she was undamaged by the torpedoes, and all of Maryland's anti-aircraft guns were soon firing skyward, claiming several attackers. But two armour-piercing bombs sliced through the deck and exploded inside the hull with devastating force. The fires they caused were extinguished and, while damaged, USS Maryland was not silenced, and her guns continued to fire at the Japanese aircraft.

After the attack and with the initial damage repaired, USS Maryland sailed to Puget Sound Navy Yard for more permanent repairs that last two months. She

USS Maryland alongside the capsized USS Oklahoma (BB-37). USS West Virginia (BB-48) is burning in the background after the Pearl Harbor attacks of December 1941





▲ USS Maryland (BB-46) firing her after 16/45 guns during the pre-invasion bombardment of Tarawa, 20 November 1943. Rear Admiral Harry W. Hill, Commander, Task Force 53, and members of his staff are observing the bombardment from Maryland's port bridge, in the foreground

was back in service by February 1942 and played a major role in the Pacific Campaign. While American strategy against the Japanese was being formulated, USS Maryland played a supporting role to the aircraft carriers which fought the Battle of Midway. Her role was to form a fleet in waiting protecting the US West Coast from invasion.

USS Maryland's wartime activities started in earnest in early 1943 during the Solomon

Islands Campaign. In late 1943 she took part in the Battle of Tarawa, where she pounded Japanese defences with her long-range gunnery. This was followed up by similar successes at the Battle of Kwajalein Atoll and the Battle of Saipan, despite a torpedo attack which blew a large hole in her bow. The damage was repaired quickly and 34 days later she was back at Pearl Harbor naval base.

USS Maryland was involved

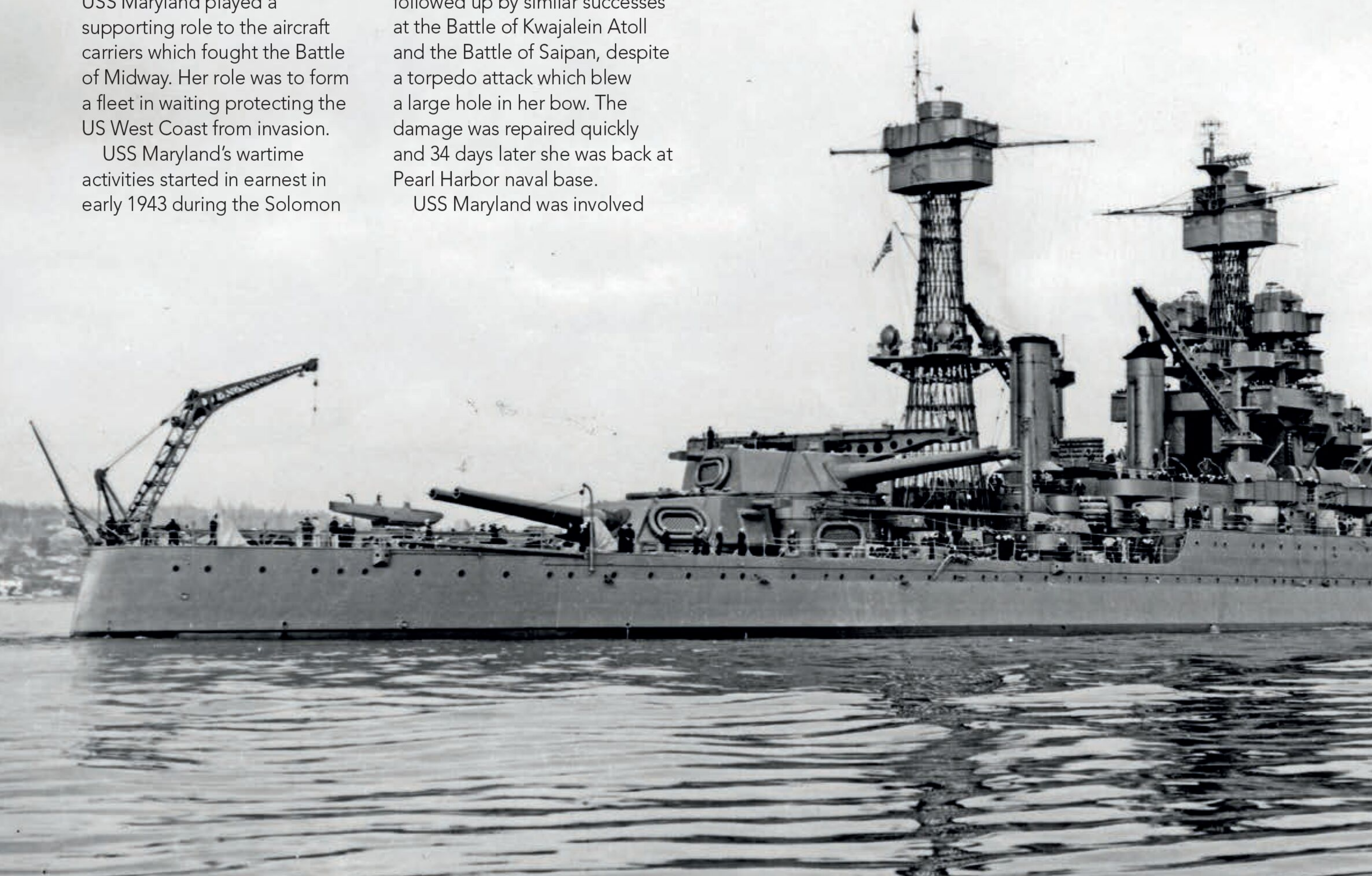
in the destruction of Japanese resistance at the Battle of Peleliu and the Battle of Leyte Gulf. On 24 October 1944, at the start of what became known as the Battle of Surigao Strait, USS Maryland, West Virginia, Tennessee, California and Pennsylvania, together with cruisers and PT boats, were stationed to protect the Strait from oncoming Japanese battle forces centred on the battleships Yamashiro and Fuso.

When the Japanese ships arrived, they were ambushed by the American force with Fuso being sunk by destroyers. Later, on 29 November 1944, Maryland was struck by a kamikaze suicide bomber, which hit between her two forward main gun turrets claiming the lives of 31 men and injuring another 30. Despite the damage, the battleship continued her duties until relieved on 2 December. She was withdrawn so repairs could be

effected at Pearl Harbor.

Back at sea in early 1945, USS Maryland played an active role in the invasion of Okinawa in early March. Her long-range guns proved useful in the elimination of numerous fortifications. On 7 April 1945 word reached the fleet that the giant Japanese battleship Yamato was at sea and heading for US forces, so USS Maryland and several other battleships sailed to intercept the Japanese ship. But before they arrived on the scene, Yamato was sunk by naval aircraft from US Navy aircraft carriers.

The same night, however, USS Maryland was hit, for a second time, by a kamikaze that rendered number 3 turret inoperative and killed ten and injured 37 men. Back at Pearl Harbor the damage was repaired, and the battleship was given additional light anti-aircraft weapons and upgraded five-inch secondary



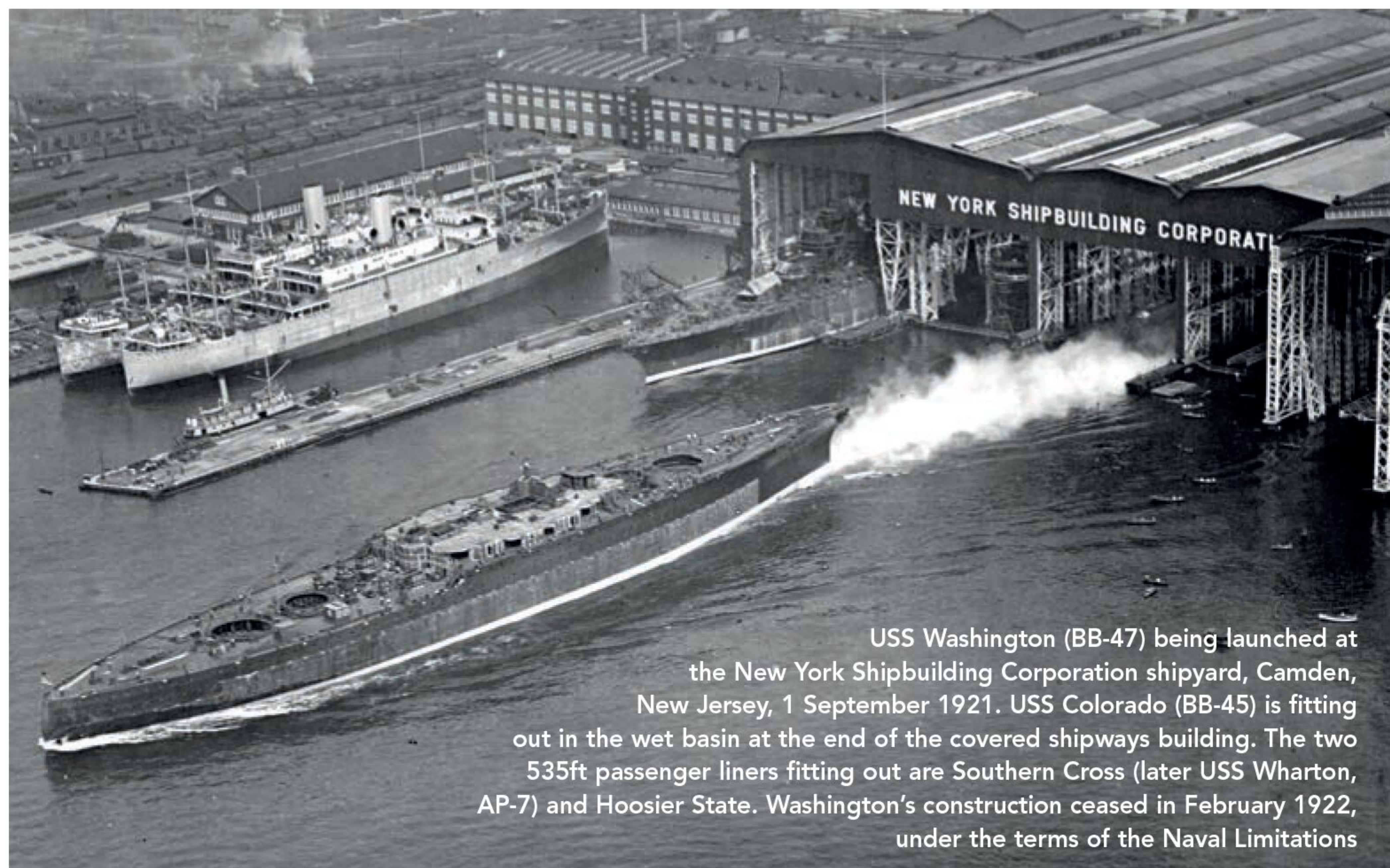
weapons. Furthermore, improvements were made to her armour protection and new double layer anti-torpedo bulges were added. USS Maryland was under repair when the Japanese surrendered to the Allies.

After the war, Maryland returned to Far East waters to play her part in the repatriation of American service personnel during Operation Magic Carpet, eventually bringing some 8,000 home. On completion of this, and without a role in the post-war fleet, she was retired to the reserve fleet at Puget Sound Naval Shipyard on 15 April 1946 and decommissioned at nearby Bremerton on 3 April 1947. She spent the next 13 years awaiting her fate, when she was sold on 8 July 1959 to Learner Co of Oakland California for breaking.

▼ USS Maryland off the Puget Sound Navy Yard, Bremerton, Washington, 9 February 1942.



USS WASHINGTON (BB-47)



USS Washington (BB-47) being launched at the New York Shipbuilding Corporation shipyard, Camden, New Jersey, 1 September 1921. USS Colorado (BB-45) is fitting out in the wet basin at the end of the covered shipways building. The two 535ft passenger liners fitting out are Southern Cross (later USS Wharton, AP-7) and Hoosier State. Washington's construction ceased in February 1922, under the terms of the Naval Limitations

BUILDER Newport News Shipbuilding

DISPLACEMENT 33,590 tons full load

ARMAMENT Never completed

FATE Sunk as target 25 Nov 1924

Construction of the third Colorado class battleship, USS Washington, began on 30 June 1919 at the New York Shipbuilding Corporation yard. Her hull was launched on 1 September 1921, and it was expected that the ship would be completed within the next two years. This never materialised

because the Washington Naval Treaty negotiations were under way, and their outcome was, of course, not known.

The Treaty was signed on 6 February 1922 and for USS Washington, which was then 76 per cent complete, work stopped on 8 February, by when all her armour plating and torpedo protection had been installed. Over the next two years little, if any, work was carried out, save for maintaining her, should construction work resume. With the US Government committed by treaty to restrictive

tonnage limits for capital ships, only the most modern and most complete vessels were completed, and in this case that was USS West Virginia. All work ceased on USS Washington in November 1924.

The hull of USS Washington was subsequently stripped of useful parts for the other ships of the Colorado class, and it was towed out to sea for destructive gunnery practice. She was struck by a variety of weapons, including bombs, shells and torpedoes, and finally succumbed and sank on 25 November 1924.

USS Washington fitting out at the New York Shipbuilding Corporation shipyard, Camden, New Jersey, late 1921.



USS WEST VIRGINIA (BB-48)

BUILDER Newport News Shipbuilding

DISPLACEMENT 33,590tons full load

ARMAMENT 8 x 16-inch (406mm), 14 x 5-inch (127mm), 4 x 3-inch (76mm), 2 x 21-inch (533mm) torpedo tubes

COMPLETED 1 December 1923

FATE Sold for breaking up 1959

The last vessel of the Colorado class was named after the State of West Virginia, with the first components placed on the slipway at Newport News Shipbuilding on 12 April 1920. She was launched on 17 November 1921 and final fitting out took until 1 December 1923, when she was handed over. During her sea trials, her steering gear failed and despite the best efforts of her crew the new battleship drifted towards the shore and eventually grounded but without significant damage on 16 June 1924.

In the inter-war years the battleship assumed the role of flagship for the Commander,

Battleship Divisions, Battle Fleet and operated mainly in the Pacific. She was modernised in the early 1930s when her original three-inch anti-aircraft guns were replaced by more powerful five-inch/25 cal guns. The refit also saw the installation of an aircraft catapult on the quarterdeck, and another on top of the uppermost aft-facing gun turret.

On 7 December 1941 USS West Virginia was berthed in Pearl Harbor's Battleship Row alongside USS Tennessee. Within minutes the Japanese aircraft had hit the battleship with seven Type 91 torpedoes on her port side and two aerial bombs had penetrated her deck. The damage was catastrophic and only through expert damage control was the ship saved from capsizing. West Virginia's captain, Mervyn S. Bennion, was later be honoured as, although mortally wounded, he refused to leave his post while his ship was under attack.





▲ USS West Virginia during a naval review in 1927. The ship spent the 1920s conducting routine training exercises and manoeuvres with the fleet, punctuated by periodic overhauls.

▼ USS West Virginia off the Puget Sound Navy Yard, Washington, 2 July 1944, following her reconstruction, with her superstructure completely revised.

Another legend was born that day: mess attendant second class Doris Miller, who manned an anti-aircraft gun despite having no training on the weapon. The ship settled on an even keel in the mud of the harbour, but the nearby USS Arizona was leaking heavy fuel oil that engulfed USS West Virginia in toxic smoke and flames.

This fuel mixed with leakage from her own fuel tanks and caused a fire that burned until the following day. Of her crew, 106 died that day. Tragically, of that number three died 16 days later, having been trapped in an airtight storeroom until 23 December. Other sailors who died were later discovered to have survived in other sections of the ship, their bodies discovered only days or weeks later.

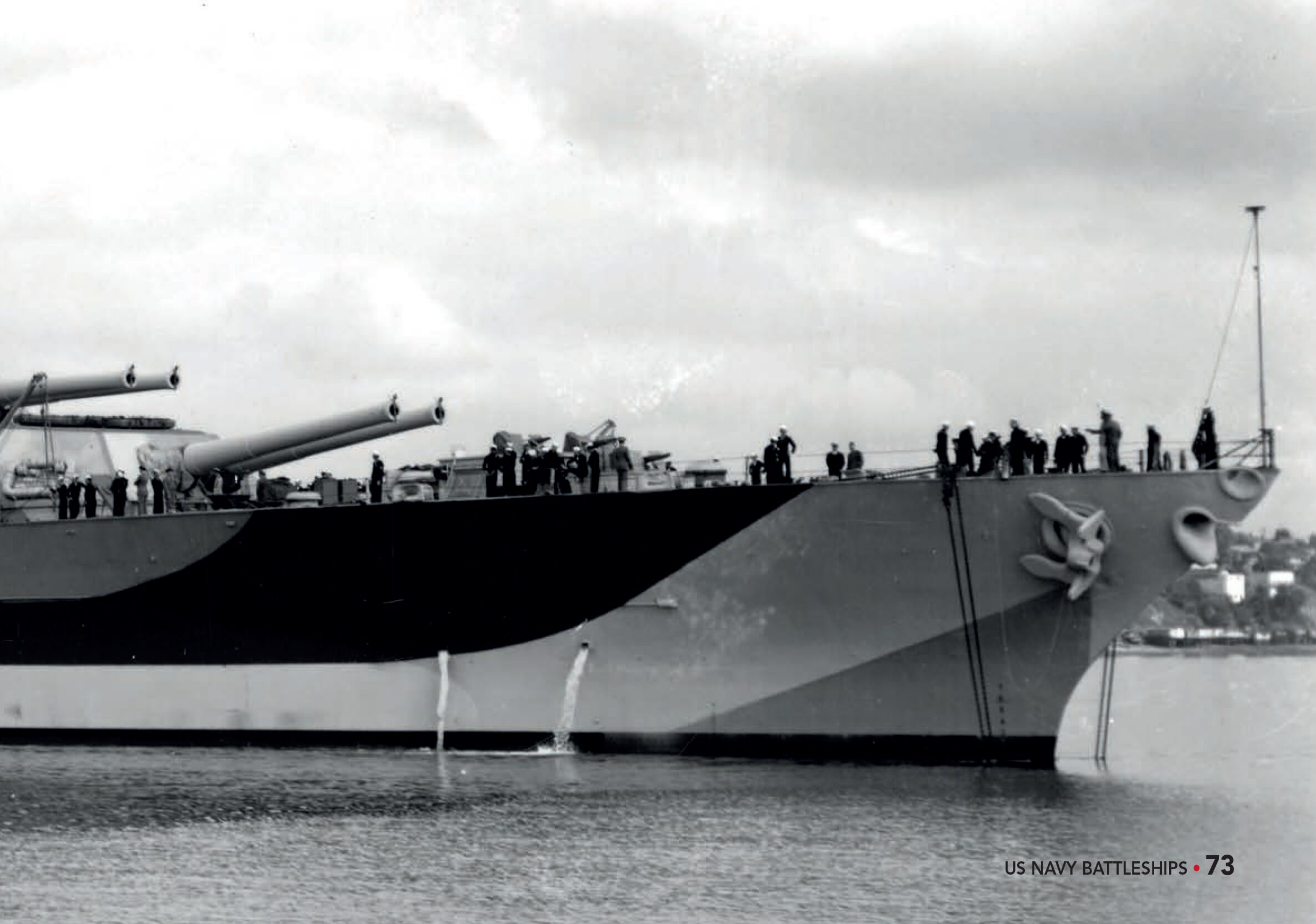
The work on salvaging the battleship began almost immediately. She was initially repaired in a dry dock at Pearl Harbor before being towed to Puget Sound Navy Yard in Bremerton for reconstruction.

The work was some of the most elaborate on any battleship during World War II. USS West Virginia received anti-torpedo bulges proposed in the 1930s, and an additional 1,400 tons of deck armour plate. Due to the number of damaged battleships, work on USS West Virginia was not completed until September 1944. When she emerged, her profile was completely altered, the conning tower had been removed and a new superstructure erected; the weapons systems had been completely updated, and she had received the latest radar and fire control systems.

By the autumn of 1944, with the Japanese on the retreat across the Pacific, another battleship for bombardment duties was welcomed by US Commanders. In September USS West Virginia joined Battleship Division 4 for operations against the Philippines. In the coming months the battleship played an active role in the Battle of Leyte

Gulf and the Battle of Surigao Strait. In late 1944 and early 1945 she was involved in pushing back Japanese forces, although she came under concerted kamikaze attacks during the island hopping campaign, which saw her operate at the Palau Islands and at the Battle of Iwo Jima, during which her big guns were used to destroy several fortifications.

At the end of the war, USS West Virginia sailed for the United States, arriving at San Diego via Pearl Harbor on 22 October 1945. Despite the extensive modernisations she received, her post-war career was extremely short, taking part in Operation Magic Carpet before entering the reserve fleet at Seattle on 9 January 1947, when she was decommissioned. She survived in reserve until 1 March 1959, when she was sold for breaking up by Union Minerals and Alloys Corps, and was finally towed away for scrap at their Todd-Pacific Shipyard on 3 January 1961.



18 SOUTH DAKOTA CLASS

The South Dakota class of battleships would, had they been completed, been a break from normal battleship design for the US Navy and would have seen several radical departures incorporated into their design. The four ships were to be named USS *South Carolina* (BB-49), USS *Indiana* (BB-50), USS *Montana* (BB-51), USS *North Carolina* (BB-52), USS *Iowa* (BB-53) and USS *Massachusetts* (BB-54).

The General Board of the US Navy had achieved a giant leap in capabilities with the South Dakota design, which included 16-inch guns and a top speed of 23 knots, two knots faster than previous designs. The Board started the process with enlarging the basic form of a Maryland class battleship of 43,200 tons and installing triple rather than double barrels

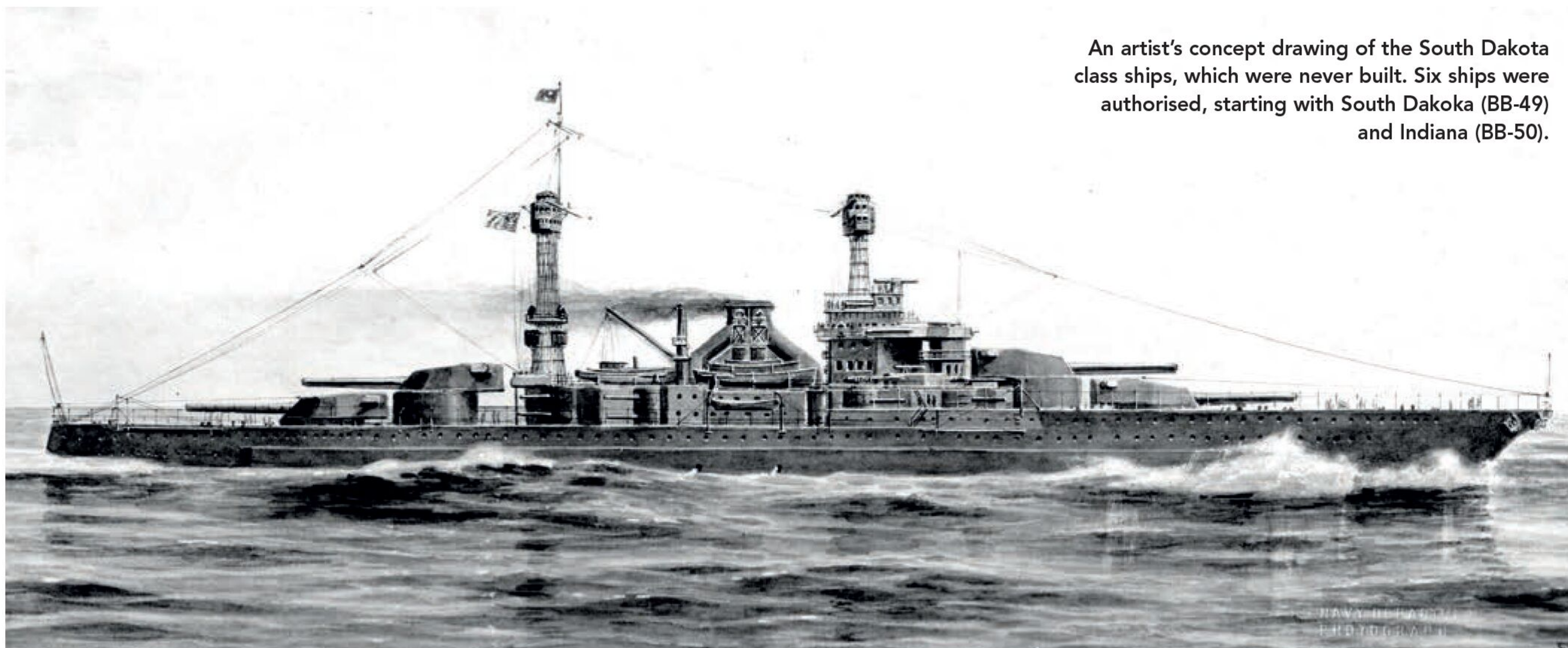
in each of the four turrets, which were sited two forward and two aft.

In 1918 the design process was paused as the Americans drew inspiration from the introduction of the British battlecruiser HMS *Hood*. Of particular note on this ship was the unusual trunking of the boilers into one large funnel, rather than the usual practice of having two or even three funnels on a ship of this size. Under normal circumstances the ships would have been laid down during World War I, but resources were targeted at the emergency anti-submarine programme during the 1917-18 period.

Six ships were authorised, with *South Dakoka* (BB-49) and *Indiana* (BB-50) being ordered from the New York Shipbuilding Corporation. The next ship

was *Montana* (BB-51), which was to be built by Mare Island Naval Shipyard. USS *North Carolina* (BB-52) was to have been built by Norfolk Navy Yard. Newport News Shipbuilding was given the fifth of the class, USS *Iowa* (BB-53), and the final vessel, USS *Massachusetts* (BB-54) was to be built by Fore River.

All the ships were laid down in 1920, except for USS *Massachusetts*, which had her keel laid on 4 April 1921. Work progressed steadily for the next few months, but following the conclusion of the Washington Naval Treaty work ceased on all six ships on 8 February 1922. At the time USS *South Dakota* was 38.55 per cent complete and USS *Massachusetts* 11 per cent. They were all officially cancelled on 17 August 1923, and all work was taken down on the stocks.



An artist's concept drawing of the South Dakota class ships, which were never built. Six ships were authorised, starting with *South Dakoka* (BB-49) and *Indiana* (BB-50).

FAST BATTLESHIPS

The Standard Type battleships gave sterling service throughout the 1920s and 1930s, providing the US Navy with a uniform, reliable battle line. However, battleship design in this period was a continuous and evolutionary process. Naval architects had to balance firepower, protection and propulsion, while integrating new technologies as rapidly as practical. By the early 1910s a new idea began to take shape within major naval powers: the concept of the 'fast battleship'. This term referred not merely to ships capable of slightly higher speeds, but to a fundamentally new class of capital ship, one that combined the heavy armour

and firepower of a battleship with speeds previously associated only with battlecruisers.

Earlier battlecruisers had achieved their impressive speed by sacrificing substantial armour protection, a compromise that proved disastrous in combat. Fast battleships, by contrast, sought to eliminate this trade-off. Through improved propulsion systems, most notably high-efficiency steam turbines and experiments with turbo-electric drive, navies could design ships capable of 27 knots or more while still retaining thick armour belts and heavy main batteries. This represented a significant leap forward from the 20-knot 'Standard Type' vessels.

The Second London Naval Treaty of 1936, which allowed limited battleship construction under revised displacement and armament rules, provided the US Navy with an opportunity to modernise its fleet at last. Eager to replace older ships with more capable designs, the Navy quickly moved ahead with plans for three entirely new classes: the North Carolina, South Dakota, and Iowa classes. In total, ten fast battleships emerged from these programmes. Most of them entered service in the late 1930s and early 1940s, just in time to face the challenges posed after the 7 December 1941 attack on Pearl Harbor, when the US was suddenly thrust into war.

19 NORTH CAROLINA CLASS

The two ships of the North Carolina class built in the late 1930s and early 1940s embodied many traditional elements of earlier American battleship designs while introducing features that defined the era of the 'fast battleship'. Each vessel displaced about 35,000 tons and measured 728ft 9in in length, with a beam of 108ft 4in. This broad beam gave the ships exceptional stability, making them reliable gun platforms in all but the worst sea conditions. Their main armament consisted of nine 16-inch 45-calibre guns arranged in the now-

standard three-turret layout: two turrets forward of the superstructure and one aft.

Secondary and anti-aircraft armament initially comprised 20 five-inch 38-calibre guns. As the war progressed, both these weapons and those of smaller calibre increased steadily in number. At the height of the conflict, nearly every available piece of deck space carried some form of defensive weapon, reflecting the growing importance of air defense in naval warfare.

Protection was equally impressive. The North Carolinas featured a 12-inch armoured belt safeguarding their

vital areas, while the deck armour was strengthened beyond previous designs, reaching a thickness of seven inches. This combination provided a balanced defence against both shellfire and aerial attack.

As fast battleships, the North Carolina class could achieve a top speed of 28 knots, allowing them to operate alongside carrier task groups in the Pacific. This performance was enabled by four General Electric geared turbines, which powered four fixed-pitch propellers. As designed, the crew complement was 1,880 sailors, with 108 officers and 1,772 enlisted men.

USS NORTH CAROLINA (BB-55)

BUILDER New York Navy Yard

DISPLACEMENT 44,377 tons full load

ARMAMENT 9 x 16-inch (406mm), 20 x 5-inch (127mm), 16 x 1.1-inch (28mm), 12 x 0.5-inch

COMPLETED 9 April 1941

FATE Memorial 1961

USS North Carolina's career started on 27 October 1937, when the first steel in her construction was laid at the New York Navy Yard. Just under three years later, she was launched on 13 June 1940. At this time America

was trying to remain out of the war in Europe, but the building of the new battleship was speeded up slightly so that on 9 April 1941 she was ready to be handed over.

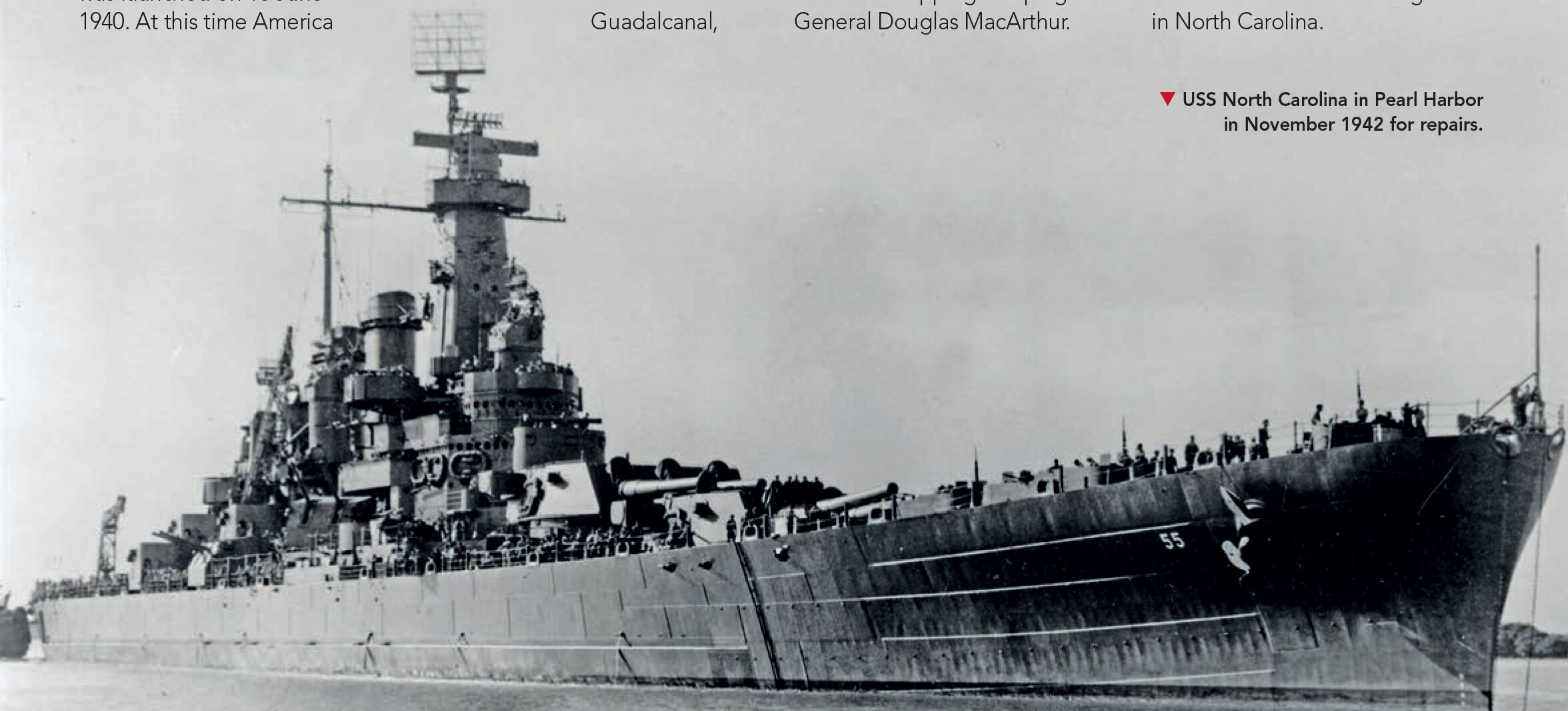
At her commissioning, USS North Carolina became the first new US battleship to enter service since the end of World War I. Following her shakedown cruise, she sailed for the Pacific. On the outbreak of war, she took part in most of the major battles of the Pacific Campaign, including the US invasion of Guadalcanal,

the Battle of the Solomon Seas and the Battle of the Santa Cruz Islands. During these campaigns she earned one of her nicknames, 'Blue Ghost', due to her ability to avoid major damage, despite being a high priority target of the Japanese attackers. Her other nickname was 'Showboat'.

In the latter stages of the war, USS North Carolina was mostly used in the role of naval gunfire support, bombarding heavily fortified enemy positions as US Marines rushed ashore during the island hopping campaign of General Douglas MacArthur.

USS North Carolina was decommissioned on 27 June 1947 in New York and placed in reserve. While she was out of service, the Navy considered several plans to modernise or convert the ship for other purposes, but these were either too costly or found to be impractical. After spending time in the Inactive Reserve Fleet awaiting her fate the ship was selected for preservation as a memorial museum. She opened to the public on 29 April 1962 and today remains a popular tourist attraction at Wilmington in North Carolina.

▼ USS North Carolina in Pearl Harbor in November 1942 for repairs.



USS WASHINGTON (BB-56)

BUILDER Philadelphia Navy Yard

DISPLACEMENT 44,377 tons
full load

ARMAMENT 9 x 16-inch (406mm),
20 x 5-inch (127mm), 16 x 1.1-inch
(28mm), 12 x 0.5-inch

COMPLETED 15 May 1941

FATE Sold for breaking 24 May 1961

USS Washington holds the distinction of being the only US battleship to have engaged in a battle with an enemy battleship at sea. She was laid down at the Philadelphia Naval Shipyard on 14 June 1938 and launched on 1 June 1940. Her commissioning took place on 15 May 1941. During her speed trials, it was discovered that due to excessive vibration she was unable to reach her designed top speed of 28 knots, but this was later achieved.

Following the declaration of war in December 1941, USS Washington was dispatched to Europe in March 1942. The journey was not without incident, as Rear Admiral John Wilcox was lost overboard and the American battleship was damaged when the Royal Navy battleship HMS King George V sank her escort, the destroyer HMS Punjabi, following a collision. Unable to steer away from the sinking debris, the American battleship ploughed through the remains as the destroyer's depth charges exploded. Later she joined the US Navy's Pacific Fleet on 23 August 1942.

USS Washington survived a near miss when the Japanese submarine I-15 fired a spread of torpedoes at the battleship on 27 October 1942. The Japanese had successfully damaged or sunk such a large number of American cruisers and destroyers in the first few days of November 1942 that Admiral Halsey was forced to commit the battleships Washington and South Dakota close inshore to bombard the Japanese forces at Henderson Field at Guadalcanal on 14 November 1942.

While she was performing

this role, USS Washington made radar contact at around 23.00 with the Japanese battleship Kirishima and her attendant destroyer. Both American battleships opened fire 17 minutes later. USS Washington's secondary five-inch guns pounded the ship and destroyed her propulsion machinery. The destroyer later sank. Washington shifted her fire to the battleship, hitting her repeatedly. The Japanese ship was hit at least 27 times before sinking.

USS Washington was taken in hand for maintenance and refit work on 28 May 1943. On completion she returned to the Pacific at the end of July 1943 and remained there until November undertaking training with other ships. On 8 December 1943 she sailed in company with escort carriers and the battleships North Carolina, South Dakota, Alabama, Indiana and Massachusetts as they bombarded Kwajalein Island. On 30 January 1944 the battleships returned to continue the bombardment. During this engagement USS Washington came under attack from a shore battery, which was soon silenced by a 16-inch salvo.

At the same time the assembled battleships and other US warships sank five Japanese guard ships and an auxiliary submarine chaser. At 10.15 USS Washington sighted a small Japanese tanker stationary in the lagoon and fired upon it, using her secondary five-inch armament. The ship exploded in a fireball. Later the same day, she also attacked and sank another Japanese vessel.

On 1 February 1944, while operating at sea, USS Washington and the USS Indiana collided with each other when the latter battleship suddenly changed course. The force of the impact was sufficient to damage a 60ft section of USS Washington's bow. She was forced to limp back to the United States to be repaired.

The battleship returned to the Pacific on 7 June 1944 and resumed her role of close escort

USS Washington running post-overhaul trials in Puget Sound, Washington, on 10 September 1945.



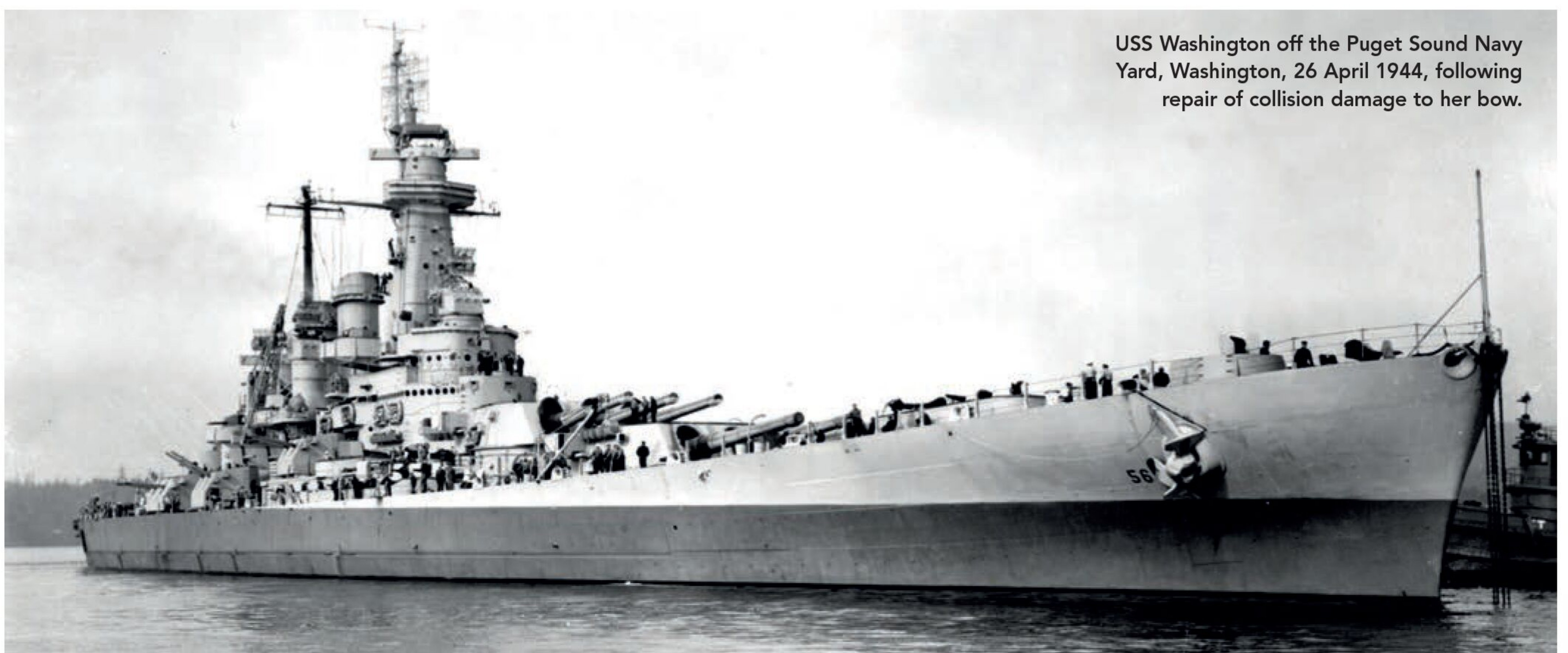
USS Washington (on right) alongside USS Vestal (AR-4) for initial repairs, after colliding with USS Indiana (BB-58) during the Marshalls Operation, 1 February 1944.



to the fleet aircraft carriers as they launched attacks against the Japanese held strongholds of Saipan and Tinian. While she was performing this task, a large Japanese fleet was sighted by American submarines on 18 June 1944. The American battleships remained as support for the aircraft carriers that launched air strikes against the Japanese fleet in what became the Battle of the Philippine Sea, which probably more than any other naval battle of World War II proved that the era of the battleship was at an end.

The battleship still provided invaluable gunfire support during the invasion of Peleliu and took part in the Battle of Leyte Gulf in late October 1944, which effectively destroyed what was left of the Imperial Japanese Navy. In February 1945 USS Washington supported the invasions of Iwo Jima and Okinawa. In late May 1945 she was ordered back to the US for a much needed overhaul.

She was in dockyard hands when the Japanese surrendered. On completion of the restorative work, in November 1945, the battleship was sent to Britain as part of Operation Magic Carpet, the repatriation of US troops from Europe and the Far East. On 27 June 1947 she was decommissioned. Despite a campaign to preserve the ship, she was eventually sold for breaking up in 1962.



USS Washington off the Puget Sound Navy Yard, Washington, 26 April 1944, following repair of collision damage to her bow.

20 SOUTH DAKOTA CLASS

The South Dakota class of battleships represented a balance between treaty limitations, political caution and the growing realities of global naval competition. Their design emerged from the framework of the Washington and London Naval Treaties, which sought to restrict battleship size and armament. By 1936, however, Japanese moves towards heavier warships prompted the Second London Treaty to introduce an 'escalator clause', allowing displacements to rise to 45,000 tons and gun calibres to reach 16 inches. Despite this opportunity, the US Congress declined to pursue a larger design.

Instead, the South Dakotas were conceived as compact yet powerful capital

ships. Displacement rose only modestly to 38,580 tons, forcing designers to concentrate armament and protection into a comparatively small hull. The class mounted nine 16-inch/45-calibre guns in three triple turrets, arranged with two forward and one aft, giving them striking power equal to much larger contemporaries. Four General Electric steam turbines drove the ships at up to 27.5 knots, enabling them to operate effectively alongside fast carrier task forces.

Achieving this combination of speed, protection, and armament within tight displacement limits required innovative engineering. Internal arrangements were

compact, armour was carefully distributed, and machinery spaces were shortened, producing ships that were shorter and more densely packed than earlier US battleships.

In wartime service, the demands placed on the South Dakotas grew significantly. Their crew complement expanded from a peacetime figure of 1,793 to well over 2,500 men, as additional anti-aircraft weapons, radar systems, and command facilities were installed. The class proved resilient and formidable in combat, embodying the United States Navy's ability to adapt treaty-bound designs into some of the most effective battleships operating during World War II.

USS SOUTH DAKOTA (BB-57)



BUILDER New York Shipbuilding

DISPLACEMENT 44,519 tons
full load

ARMAMENT 9 x 16-inch (406mm),
20 x 5-inch (127mm), 12 x 1.1-inch
(28mm), 12 x 0.5-inch guns

COMPLETED 20 March 1942

FATE Scrapped 25 October 1962

The lead ship of the South Dakota class was built by New York Shipbuilding in New Jersey and launched on 7 June 1941. Following her completion at the Philadelphia Navy Yard, she was commissioned into the US Navy on 20 March 1942 under the command of Captain Thomas Leigh Gatch.

The battleship was involved in some of the most extensive wartime activities of any US battleship, joining Task Force 16 under the command of legendary Vice Admiral William 'Bull' F. Halsey aboard the aircraft carrier USS Enterprise.

USS South Dakota was thrust into the Guadalcanal campaign

in mid-1942. Despite suffering some damage from an accidental grounding on an uncharted reef, the ship was soon back in action at the Battle of Santa Cruz and the Second Battle of Guadalcanal. During the latter battle, South Dakota suffered several electrical failures which led to her being targeted by

Japanese forces, which believed she was easy prey.

The American warship sustained over two dozen large calibre hits which damaged parts of her superstructure and caused significant casualties among her crew. The extent of the damage meant she was withdrawn to the US for repairs, which took until 1943 to be completed. During the refit process, she received new radar and additional anti-aircraft guns. On completion she was briefly attached to the British Home Fleet and tasked with protecting vital merchant ships on the Arctic convoys to Russia.

She was, however, soon returned to service in the Pacific and over the course of the next two years provided gunfire support and escorted aircraft carriers during the Gilbert and Marshall Islands campaign, the Mariana and Palau Islands campaign of mid-1944 and was present during the recapture of the Philippines, the Battle of Leyte Gulf and the battles of Iwo Jima and Okinawa. Towards the end of the conflict USS South Dakota closed the Japanese home islands on three occasions and bombarded coastal cities and industrial locations including the Kamaishi Steel Works.

USS South Dakota's final journey from active warship to a reserve unit started on 3 January 1946, taking her through the Panama Canal to the Philadelphia Navy Yard where she was laid up and decommissioned on 31 January 1947. The battleship was briefly considered for modernisation in 1954 to house Talos and Tartar guided missiles, but these plans came to nought.

She spent 15 years in reserve until 1 June 1962, when she was declared surplus to requirements and so was sold to the Lipsett Division of Luria Brothers & Co to be broken up at Kearny, New Jersey. Several pieces of the ship were retained to serve as a memorial to the battleship, which was erected in Sioux City. Other parts were retained by the National Museum of the US Navy.

USS INDIANA (BB-58)

BUILDER Newport News Shipbuilding

DISPLACEMENT 44,519 tons full load

ARMAMENT 9 x 16-inch (406mm), 20 x 5-inch (127mm), 12x 1.1-inch (28mm), 12 x 0.5-inch guns

COMPLETED 30 April 1942

FATE Scrapped 6 September 1963

The second ship of the South Dakota class, USS Indiana, was, like her sisterships, built to a strict 35,000-ton displacement limit. This made the South Dakotas cramped internally. Indiana was authorised on 27 March 1934 and her keel was laid down at the Newport News Shipbuilding and Dry Dock Co on 20 November 1939. She was launched days before the Japanese attack on Pearl Harbor on 21 November 1941. After the declaration of war, work on the battleship intensified and she entered service on 30 April 1942. After a brief work up, the ship went to the Pacific.

Her war record commenced with the Guadalcanal campaign, during which she pounded Japanese defences. She was also used as a floating gun battery defending US aircraft carriers. Throughout the next three years USS Indiana served with distinction at the battles of the



Philippine Sea, Tarawa, Kwajalein, the Battle of Peleliu and at Iwo Jima and Okinawa in 1945. After the Japanese capitulation, sailors from USS Indiana were part of the Army of Occupation.

After the end of the war, Indiana transported 1,013 servicemen back to the US as part of Operation Magic Carpet. On her arrival at Hunters Point Naval Shipyard in San Francisco, she was taken in hand for several weeks of repairs. It was planned to deactivate the battleship and work to achieve this was undertaken at Puget Sound in Washington State, where her flag was lowered on 29 March 1946.

She remained part of the Pacific Reserve Fleet with occasional plans suggested to modernise the vessel through

▲ USS Indiana bombarding Kamaishi, Japan, on 14 July 1945. Indiana fired 271 shells from her 16-inch guns, but smoke hindered the efforts of her spotter aircraft from observing the effects of the shooting. Indiana operated off Japan extensively during 1945 as the war came to an end.

the addition of guided missiles and new computer technologies, but on 27 June 1961 it was announced that all four South Dakota class battleships were suitable for disposal.

Struck from the Naval Register, USS Indiana was sold for breaking up on 6 September 1963. Interestingly some parts of the battleship survive, her main mast, prow and a pair of anti-aircraft guns are at Indiana University's Memorial Stadium.

USS Indiana in the South Pacific in December 1942.



USS MASSACHUSETTS (BB-59)



USS Massachusetts, third of four South Dakota class fast battleships built for the United States Navy in the late 1930s, off Point Wilson, Washington, July 1944.

BUILDER Bethlehem Steel Corporation, Quincy, Mass.

DISPLACEMENT 44,519 tons full load

ARMAMENT 9 x 16-inch (406mm), 20 x 5-inch (127mm), 12 x 1.1-inch (28mm), 12 x 0.5-inch guns

COMPLETED 12 May 1942

FATE Museum ship from 1965

USS Massachusetts, known affectionately by her crews as 'Big Mammy', was laid down at the Fore River Shipyard on 20 July 1939 and launched on 23 September 1941. Work on the battleship was accelerated after December 1941, and she was commissioned on 12 May 1942. After her shakedown cruise, she joined the Allied forces assembling for the invasion of North Africa under Operation Torch. Together with other heavy units, Massachusetts took part in the Naval Battle of Casablanca in November 1942.

During the mostly one-sided affair, the battleship bombarded shore positions and hit the incomplete French battleship Jean Bart, which fired back. USS Massachusetts silenced Jean Bart's gunnery with five direct hits. The American battleship

then fired on shoreside facilities, including ammunition dumps, oil stores and merchant ships, in the harbour at Casablanca. With the Vichy French forces all but destroyed USS Massachusetts was shifted to the Pacific.

In March 1943 Massachusetts joined the US Pacific Fleet and took part in the majority of the major campaigns during the latter stages of World War II including the Gilbert and Marshall Islands campaign with the amphibious landings on Makin Island, Tarawa, Abemama and Nauru. In 1944 she returned to the US to have her guns relined at Puget Sound Naval Shipyard. Upon her return to the warzone and the US Third Fleet, USS Massachusetts supported strikes on Morotai, Peleliu and Luzon in the Philippines.

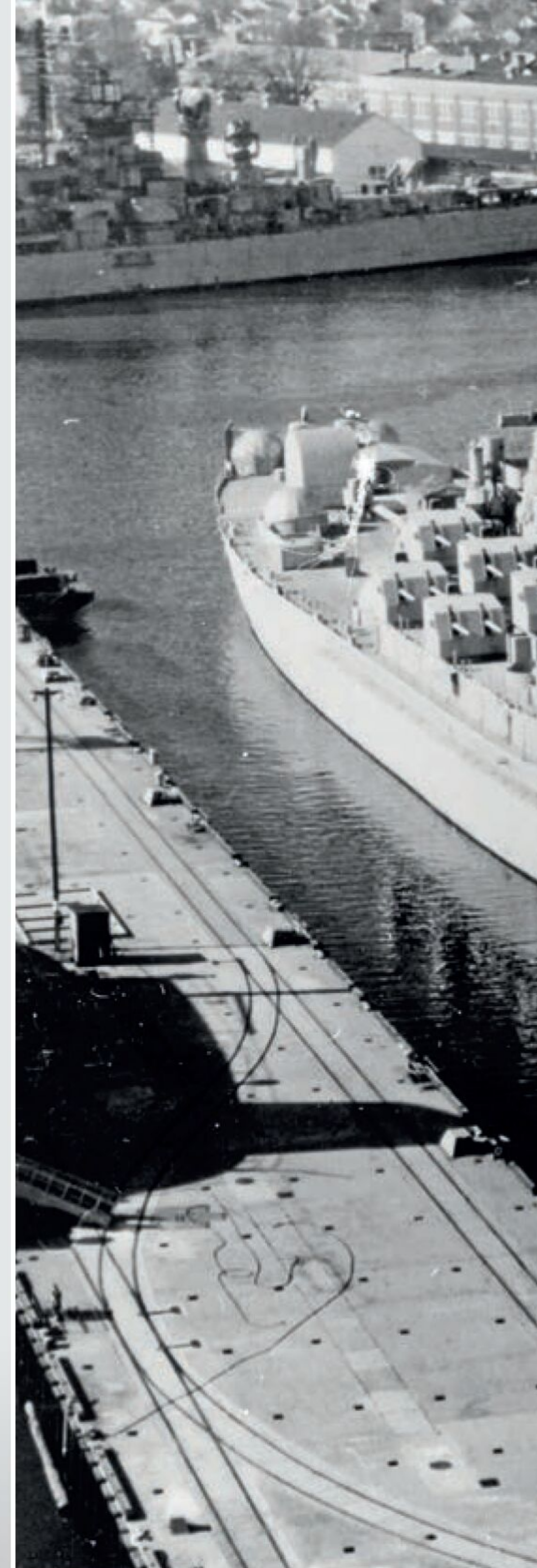
On 19 October 1943 the Japanese initiated Operation Sho-Go to counter the American raids with three interlaced operations designed to draw US warships away from the Philippines and into a trap, while other heavy units attacked the American invasion forces directly. The Japanese ships were detected in the San Bernardino Strait and battle was joined,

which resulted in the sinking of the Yamato class battleship Musashi by American carrier aircraft in the Battle of the Sibuyan Sea. USS Massachusetts remained close to the carriers as the Battle of Cape Engano took place on the 25 October 1943, which resulted in the destruction of all four Japanese carriers and damaged two battleships.

With these successes Allied forces pushed faster into Japanese held territory, taking Mindoro, Lingayen Gulf, Okinawa, Formosa and Iwo Jima. Having survived two typhoons, USS Massachusetts's last wartime role was to close the Japanese mainland and, together with the Royal Navy's battleship HMS King George V, bombard industrial factories at Hamamatsu on 9 August 1944.

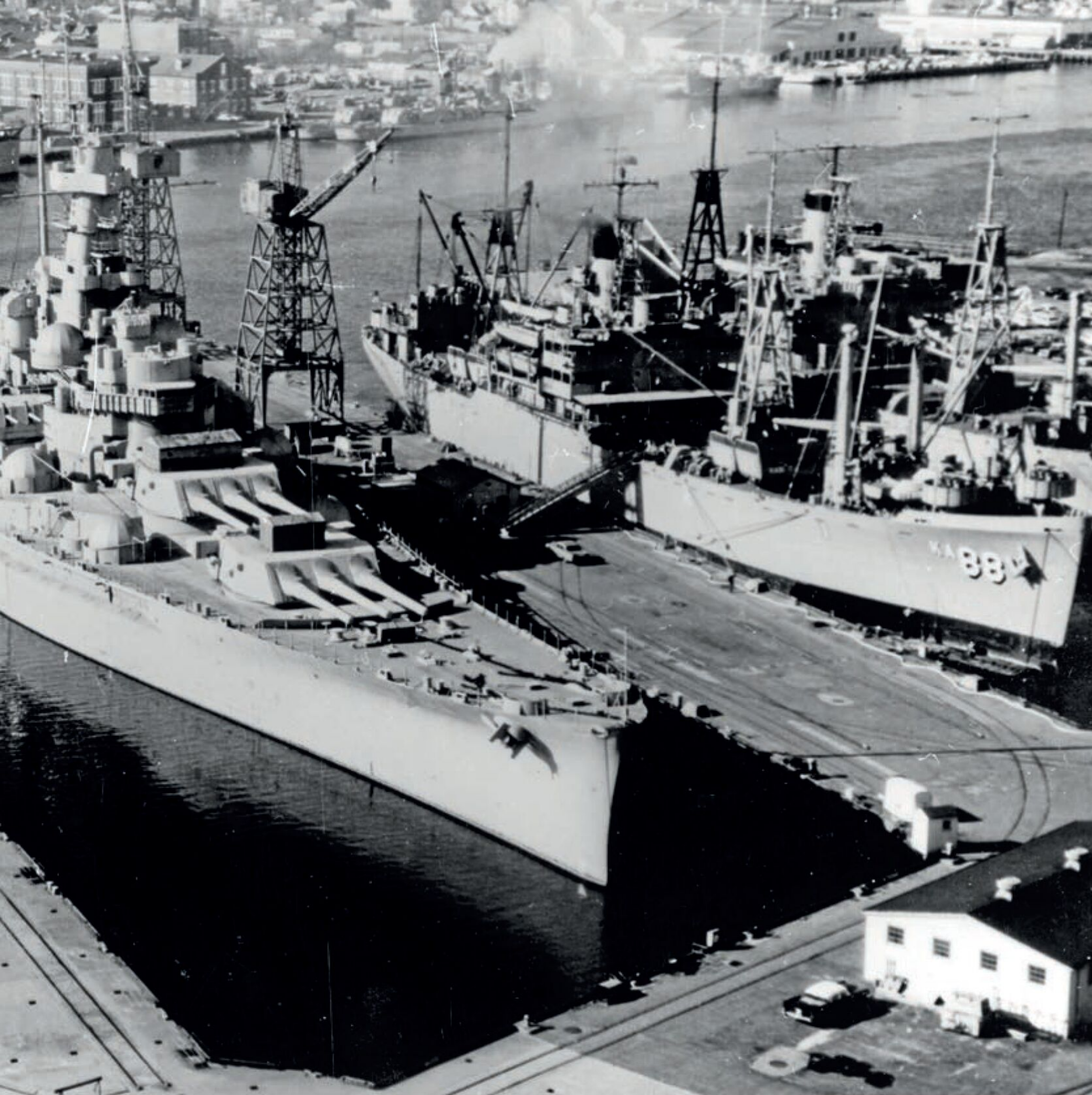
Following the Japanese surrender, USS Massachusetts returned home for refit at Puget Sound Naval Base. It was widely assumed she would be retained in the post-war fleet, but after journeying to Norfolk Naval Base she was decommissioned on 27 March 1947 and passed to the Atlantic Reserve Fleet.

Plans were made to re-equip the battleship with modern



► USS Massachusetts refuelling from the tanker USS Saugatuck in 1945

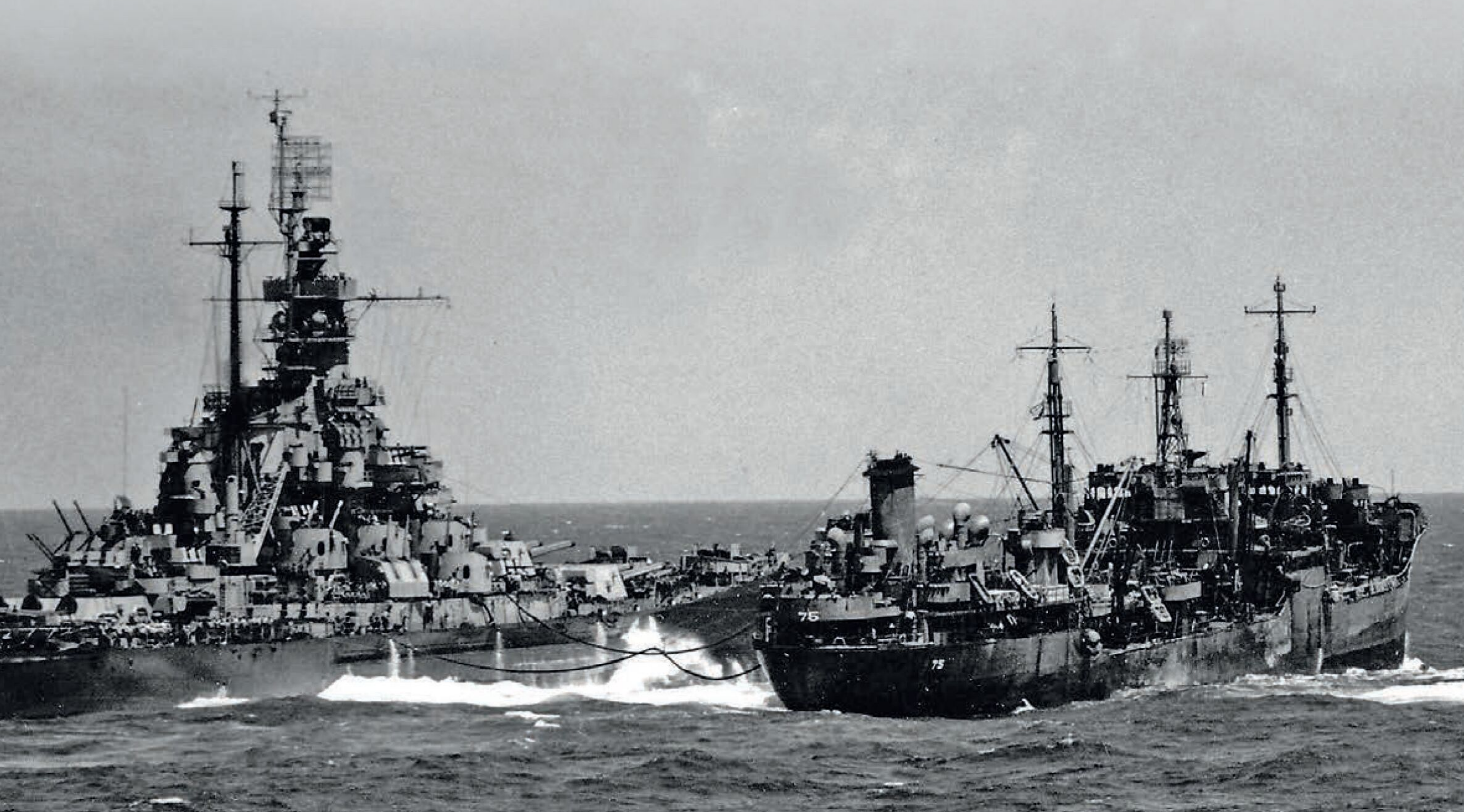




◀ USS Massachusetts laid up at the Norfolk Naval Shipyard, Virginia, on 3 January 1963. At that time she had been stricken from the Naval Vessel Register, but was awaiting preservation as a memorial. USS Uvalde (APA-88) is on the right.

weapon systems, including having the three main gun turrets replaced with a twin RIM-8 Talos anti-aircraft missile launcher forward and two RIM-24 Tartar missile launchers aft. However, the cost of £120 million (at 1957 prices) was too great and the plans were abandoned. By 1962 any plans to reactivate the battleship had been forgotten and instead she was struck from the fleet and was expected to be scrapped.

However, a group of former crewmembers campaigned for her to become a museum ship, and in 1965 ownership of the battleship passed to the state of Massachusetts. She became the centrepiece of Battleship Cove, a naval and maritime museum. In the 1980s when the Iowa class battleships were being reactivated, USS Massachusetts was raided for parts to keep the Iowas operational.



USS ALABAMA (BB-60)

BUILDER Norfolk Navy Yard

DISPLACEMENT 44,519 tons
full load

ARMAMENT 9 x 16-inch (406mm),
20 x 5-inch (127mm), 12 x 1.1-inch
(28mm), 12 x 0.5-inch guns

COMPLETED 16 August 1942

FATE Memorial 1964

USS Alabama (BB-60), the final ship of the South Dakota-class, emerged from the Norfolk Navy Yard as one of the most advanced American battleships of World War II. Her keel was laid on 1 February 1940, at a time when global tensions were rising and the United States was accelerating its naval construction programme.

Designed to combine heavy armour, powerful 16-inch guns, and a compact silhouette that reduced her target profile, Alabama embodied the Navy's

shift toward fast, hard-hitting capital ships. She was launched on 16 February 1942, sliding into the Elizabeth River in front of a large crowd, and commissioned into service on 16 August 1942 under the command of Captain George B. Wilson.

Following trials and initial training, Alabama was assigned to the British Home Fleet in early 1943, operating from Scapa Flow to guard against the threat posed by German surface raiders and to protect Arctic convoys bound for the Soviet Union. In May 1943 she was released from this duty and ordered to the Pacific, where the island-hopping campaign demanded powerful naval gunfire and aircraft carrier escorts.

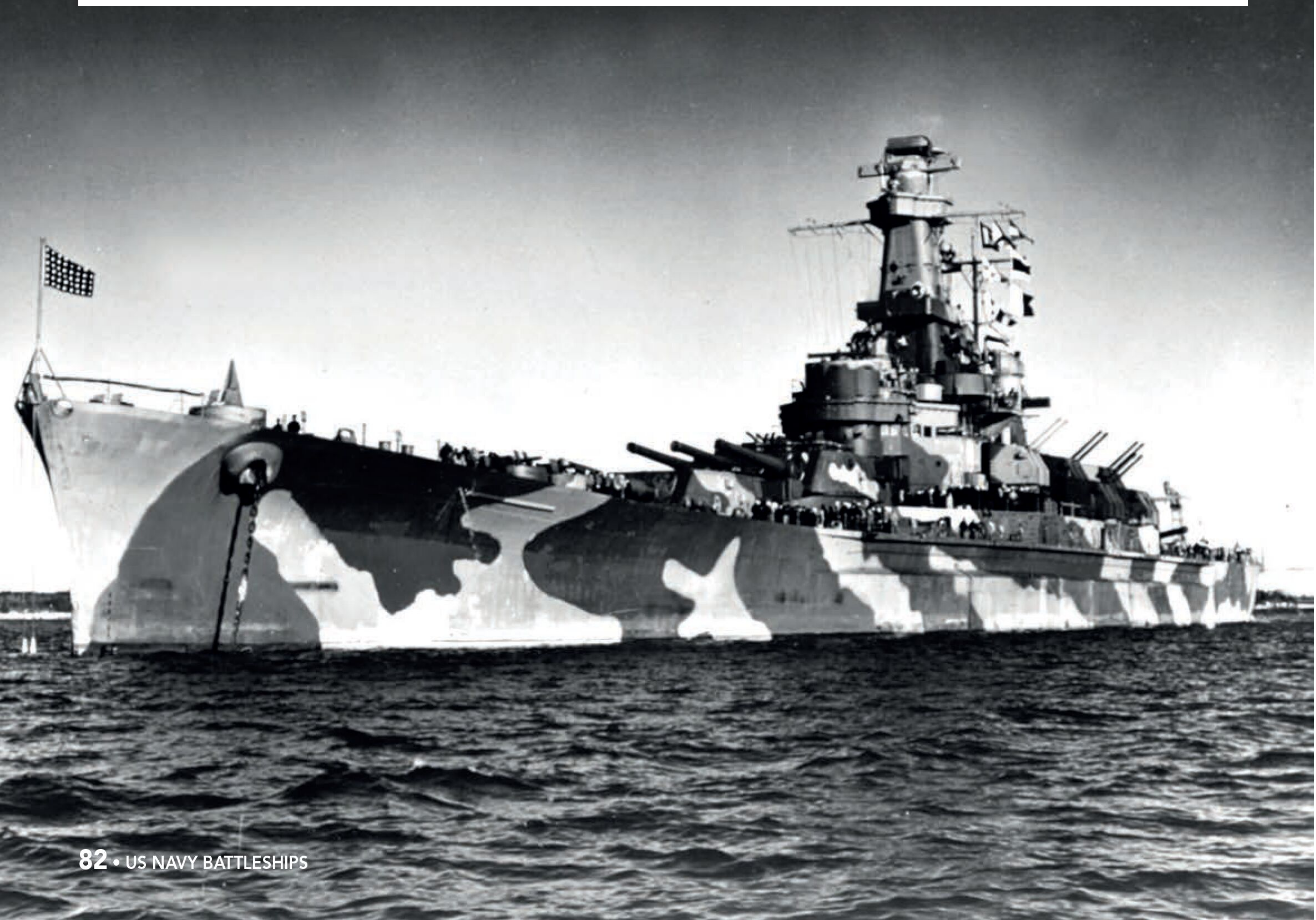
Throughout late 1943 and the first half of 1944, Alabama served primarily as a protective

screen for fast carrier task forces, using her anti-aircraft batteries to defend against Japanese air attacks. Her 1944 refit brought improved radar systems with significantly greater range, enhancing her ability to detect incoming raids, and strengthened the fleet's layered air defence. She also took part in bombardments of Japanese-held islands ahead of amphibious assaults.

In October 1944 Alabama played a key role in the Battle of Leyte Gulf, the largest naval engagement of the war. Assigned to Admiral William F. Halsey's forces, she helped counter the Japanese Northern Force, a carrier group intended as a decoy to draw American ships away from the main battle area. Her presence contributed to the overwhelming American victory that secured the liberation of the Philippines.

Her final major combat operations came in July 1945, when she joined the bombardment of the Japanese home islands. After the surrender, she remained on station as part of the occupation forces, and her Marine Detachment were among the first American troops to go ashore in Japan.

Returning to the United States, Alabama was decommissioned on 9 January 1947 and placed in reserve, where she served for years as a source of spare parts. On 6 January 1965 she was saved from scrapping and preserved as a museum ship. Operated by the USS Alabama Battleship Commission, she is berthed at Battleship Memorial Park in Mobile, Alabama. Although damaged during Hurricane Katrina in 2005, she has since been fully repaired.



21 IOWA CLASS

Often described as the ultimate in battleships, the Iowa class ships were the last battleships to be built for the US Navy. The Iowas were the largest and most powerful US battleships ever built, displacing 48,110 long tons at standard load and 57,540 long tons at full load. They carried an impressive arsenal of nine 16-inch guns in three turrets backed up by 20 five-inch, 80 40mm and 49 20mm guns, and had a top speed of around 33 knots. Their design drew greatly on the early war experience of other battleships and, by the end of the war, these ships bristled with anti-aircraft guns to oppose enemy bombing and torpedo attacks.

The Iowas were some of the most heavily-armoured ships ever built, with an armour belt 12 inches thick over the vital areas and even their decks were 7.5 inches thick. Sadly, these impressive warships were designed for a different kind of war than that which emerged in the Pacific

of World War II. They were designed for fleet-to-fleet engagements at distance, when their long-range guns could bombard a fleet from far away.

By World War II the aircraft carrier was reigning supreme, armed with squadrons of aircraft carrying armour-piercing bombs and torpedoes, thus rendering the battleship obsolete almost overnight. The Iowas, however, proved useful when the war became one of attacking island chains, as their massive 16-inch guns could pound enemy positions ashore prior to US troops being landed.

After the war the battleships proved expensive to operate and they were gradually put into reserve. The unfinished USS *Illinois* and USS *Kentucky* were in different states of build, but neither was completed. As for the inactive four Iowa class ships, they were retained in the reserve fleet because of a US Marine requirement for heavy bombardment

ships, and in both the Korean and Vietnam wars this capability was needed.

After Vietnam came a long wait for reactivation that only emerged following the election of President Ronald Reagan to the White House. He increased American defence spending and pledged to rebuild the US Navy to face the threat posed by the Soviet Union. Consequently, the battleships received multi-million dollar refits which saw them fitted with modern electronics and sensors, together with Harpoon anti-ship missiles and Tomahawk land attack missiles.

The refits took place between 1981 and 1986 and saw all four battleships returned to the active fleet for one last hurrah. But with the fall of the Soviet Union in 1989 and the subsequent drop in defence spending, the manpower-intensive ships, with their massive maintenance requirements, proved uneconomical and they were decommissioned for good.



▲ USS Missouri fires a salvo from the forward gun turret during her shakedown period, August 1944.

▶ USS Iowa (BB-61) being prepared for launching, at New York Navy Yard, in August 1942.

▼ View looking aft from the foredeck of USS New Jersey, showing her forward 16/50 guns and superstructure, circa 1968-69.



USS IOWA (BB-61)

BUILDER New York Navy Yard

DISPLACEMENT 57,540 tons full load

ARMAMENT 9 x 16-inch (406mm), 20 x 5-inch (127mm), 80 x 40mm, 49 x 20mm guns

COMPLETED 22 February 1943

FATE Memorial in Los Angeles

The first steel for USS Iowa was laid on 27 June 1940. Following the Pearl Harbor attack, resources were poured into New York Navy Yard so the battleship could be completed as quickly as possible. Work proceeded apace and USS Iowa was launched on 27 August 1942. Final fitting out took until 22 February 1943, when the ship was handed over to the US Navy.

Iowa's trials began two days later in the Chesapeake Bay area and continued throughout spring and early summer. Her powerful 16-inch guns were one of the main reasons that she was deployed to Argentina on 27

August 1943, where they could be used against the German 15-inch-gunned battleship Tirpitz. The confrontation, however, never materialised as the German ship did not leave her lair in the Norwegian fjords. USS Iowa did, however, perform the task of transporting US President Franklin Delano Roosevelt to Casablanca for talks with Winston Churchill and Joseph Stalin. She also carried the American President back home to the United States.

By 1944 it was clear that the course of the war in Europe was heading in the Allies' favour, but the situation in the Pacific was still in the balance. On 2 January 1944 USS Iowa joined the 7th Battle Division ranged against the Japanese. She received a baptism of fire during the Marshall Islands' Campaign, supporting the aircraft carrier strikes between 29 January and 3 February on Kwalein, Eniwetok and the

Japanese base at Truk Island.

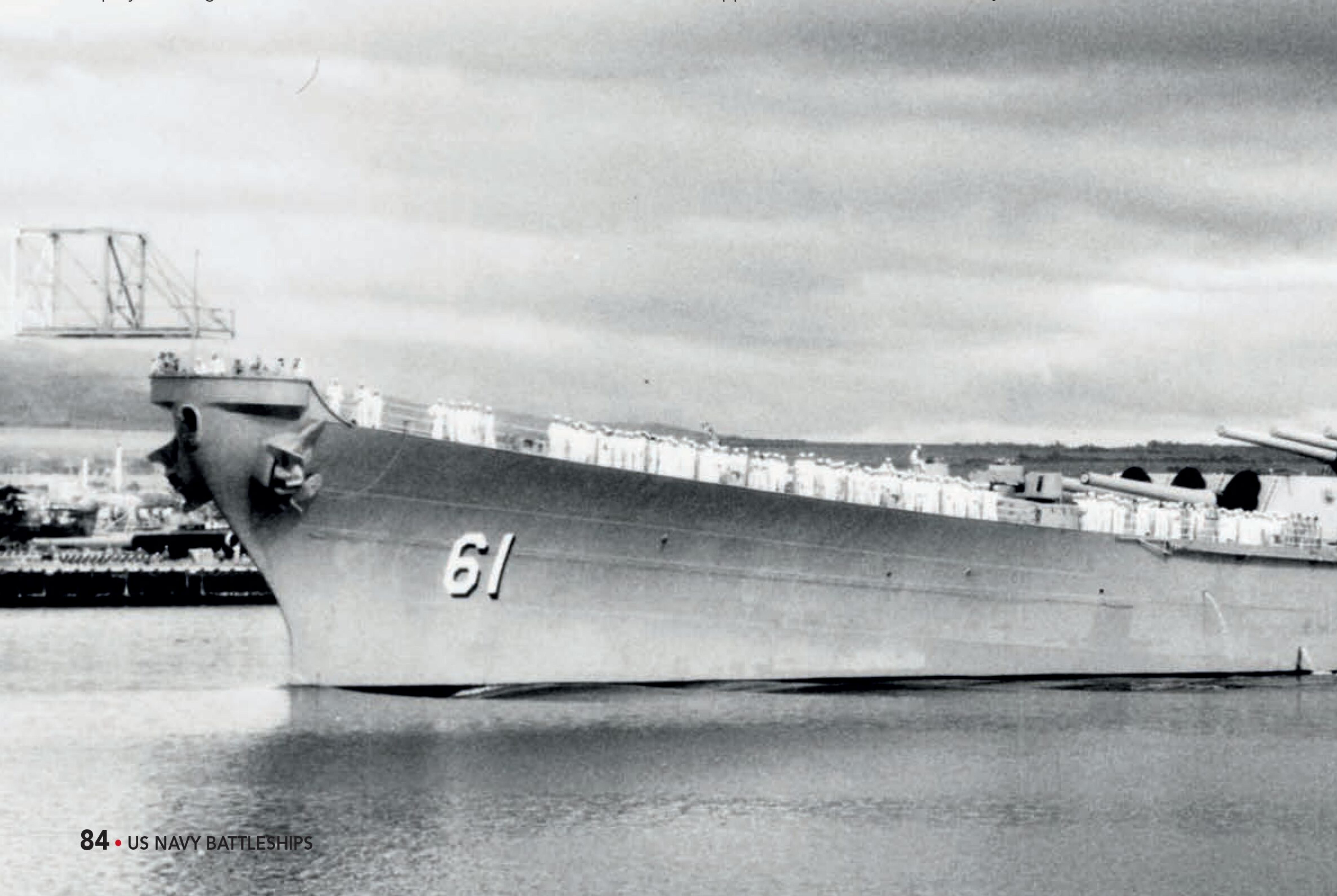
In February 1944 USS Iowa took part in the first strikes on Saipan, Tinian, Rota and Guam. During the attack on Mili Atoll, the battleship was struck by two Japanese shells, but received only minor damage. The war in the Pacific had by this time become a slow process of island hopping, with the aircraft from the carriers performing most of the attacks. Battleships such as USS Iowa provided the heavy bombardment once the initial strikes had cleared the way. Iowa was now part of Task Force 58 and participated in strikes on Palau, Woleai, Hollandia, Aitape and Wakde, before attacking targets in New Guinea.

USS Iowa remained close to the aircraft carriers throughout 1944 as American forces pushed their way towards the Japanese home islands. She used her powerful guns against Ponape in the Caroline Islands and on 19 June was part of the force repelling four massive Japanese strikes during the Battle of the Philippine Sea that resulted

in the near destruction of all Japanese aircraft carriers.

In the following months Iowa participated in strikes against the Palau Islands and the US Marines landings on the islands of Guam, Peleliu, Okinawa and Luzon and at the Battle of Leyte Gulf. In December 1944 Iowa was repaired at San Francisco, returning to the warzone in time for the strikes against Okinawa and the naval bombardment of the Japanese home islands of Kyushu and the cities of Hitachi and Muroran.

USS Iowa was present in Tokyo Bay for the official signing of the surrender documents by the Japanese High Command, but sailed on 20 September 1945 to return to Seattle, arriving to a hero's welcome on 15 October 1945. After a refit, she returned to Japanese waters as flagship of the 5th Fleet of occupation, serving in this capacity until 25 March 1946. Between March 1946 and September 1948, she operated off the west coast of the United States before being withdrawn from service for two years on 24 March 1949.



Iowa was reactivated on 14 July 1951, and formally recommissioned on 25 August, with Captain William R. Smedberg III in command. She sailed for Korean waters in March 1952. On 1 April she relieved sistership USS Wisconsin and became the flagship of Vice Admiral Robert P. Briscoe, commander of the Seventh Fleet. In her first combat operation of the Korean War, Iowa fired her main guns near Wonsan-Sangjin on 8 April 1952, striking North Korean supply lines.

On 19 October 1952 she sailed for Norfolk, Virginia. Between 1953 and 1958 Iowa participated in naval exercises, including Operation Mariner and Operation Strikeback in 1957, as well as extended cruises to the Mediterranean and South America. On 24 February 1958 USS Iowa was decommissioned

at Philadelphia and placed in the Atlantic Reserve Fleet.

Following his election as President, Ronald Reagan started to rebuild America's military forces in the early 1980s and part of the plan was to reactivate all four Iowa class battleships and arm them with 16 AGM-84 Harpoon anti-ship missiles and 32 BGM-109 Tomahawk cruise missiles, together with more powerful radar and fire control systems.

USS Iowa was reactivated on 28 April 1984 and between 1985 and 1989 operated in the Atlantic and Mediterranean. Perhaps to prove a point that the 16-inch guns onboard were as good as they had always been, USS Iowa set a new record for the longest shoot, when a shell was fired out to a range of 43.3km on 20 January 1989.

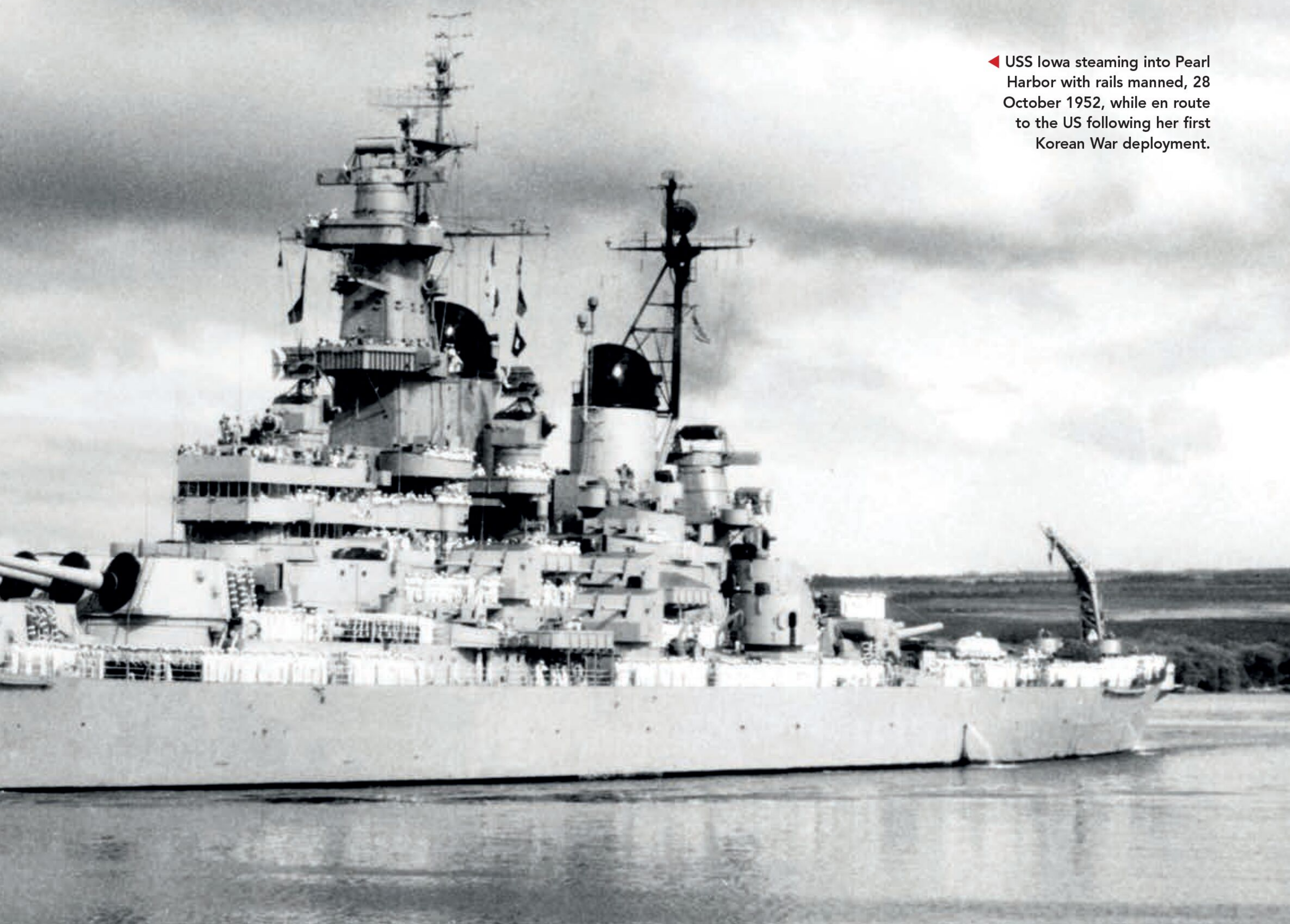


Iowa being towed to Los Angeles in May 2012. (Dawn Endico)

Tragedy befell USS Iowa during FLEETEX 3-89, when the powder charge used in one of the guns of No.2 turret caught fire and exploded, igniting further charges and killing 47 men.

USS Iowa was decommissioned for the final time on 26 October 1990. On 6 September 2011, after

seven years in reserve, she was gifted to the Pacific Battleship Center at the Port of Los Angeles to become a museum ship. Iowa began her final journey on 26 May 2012 under tow by four Crowley tugs, and on 9 June 2012, she was permanently docked in San Pedro at Berth 87.



◀ USS Iowa steaming into Pearl Harbor with rails manned, 28 October 1952, while en route to the US following her first Korean War deployment.

USS NEW JERSEY (BB-62)

BUILDER Philadelphia Navy Yard

DISPLACEMENT 57,540 tons
full load

ARMAMENT 9 x 16-inch (406mm),
20 x 5-inch (127mm), 80 x 40mm,
49 x 20mm guns

COMPLETED 23 May 1943

FATE Memorial at Camden, N Jersey

Philadelphia Navy Yard started work on USS New Jersey on 16 September 1940. She was launched on 7 December 1942 and handed over to the US Navy on 23 May 1943. New Jersey, also known as 'Big J' or 'Black Dragon', joined Task Group 58.2 of the US 5th Fleet in early 1944 in time to join the attack on the Marshall Islands. Her role was principally to escort the aircraft carriers whose aircraft attacked the Japanese held islands of Kwajalein and Eniwetok.

Admiral Raymond Spruance chose the battleship as his flagship from where he commanded the 5th Fleet as it attacked the Japanese stronghold of Truk during Operation Hailstone. In total 38 Japanese vessels were sunk or badly damaged in the raid, with New Jersey claiming the destruction of an armed trawler and shared in the sinking of the destroyer Maikaze.

In early June 1944 the battleship and her task group attacked the Mariana Islands, with New Jersey's guns pounding Saipan and Tinian. The Japanese sent their remaining surface fleet in what became one of the largest surface actions of World War II, the Battle of the Philippine Sea, which proved to be a mostly one-sided affair. Japan suffered appalling losses, with over 400 aircraft shot down, and the the aircraft carriers Taiho, Shokaku and Hiyo being sunk. Two other Japanese carriers limped away severely damaged.

From there, USS New Jersey joined strikes against Guam, the Philippines, Okinawa and Formosa (Taiwan), participated in the Battle of Leyte Gulf, and survived Typhoon Cobra which sank three destroyers in December 1944. In early

1945 Iowa made further strikes against Japanese positions, progressively closer to the home islands. After Japan surrendered, New Jersey remained in Japanese waters until 28 January 1946.

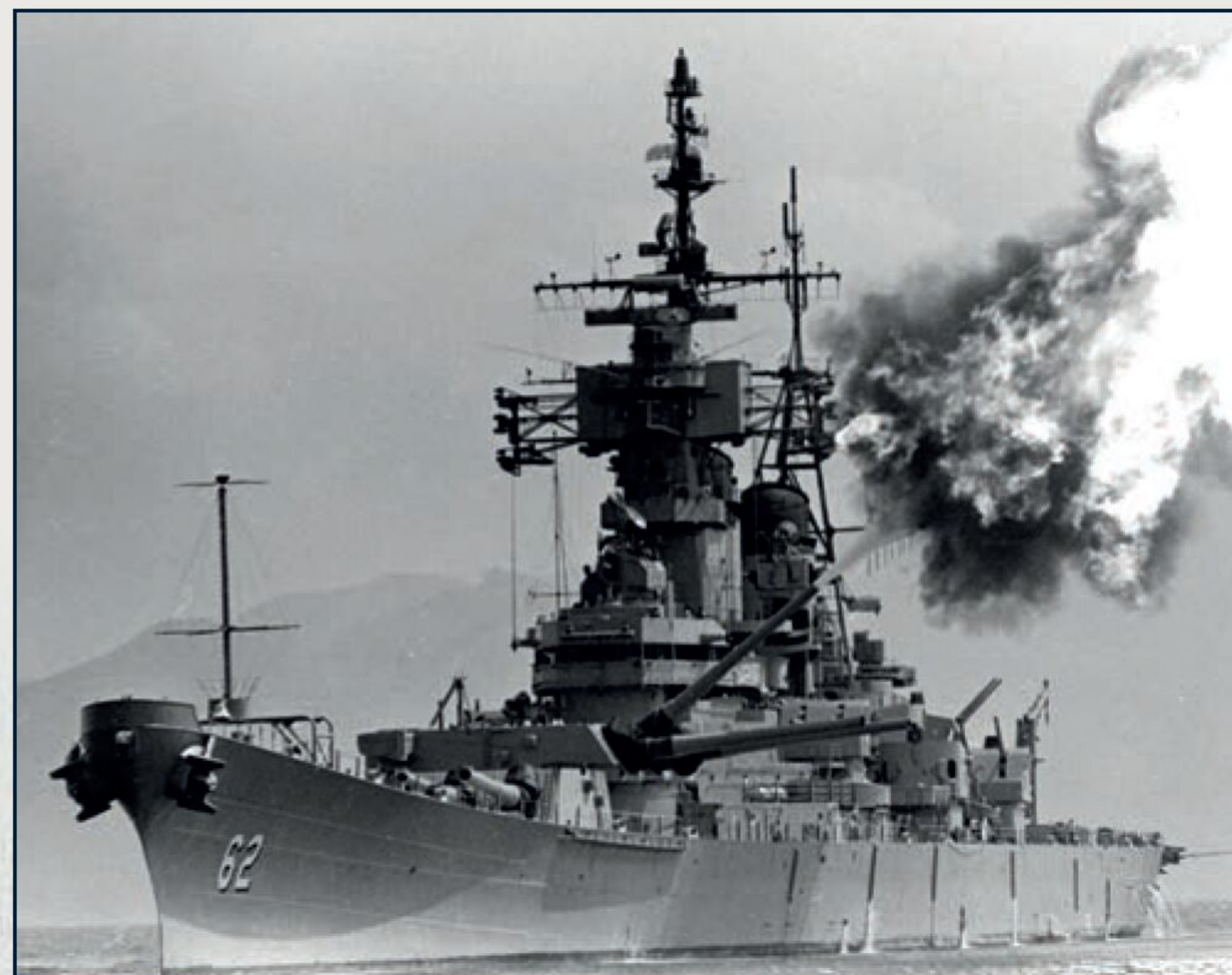
After the war USS New Jersey ferried troops back to San Francisco as part of Operation Magic Carpet, and was then placed in reserve. She was reactivated for the Korean War in 1950, being deployed twice and using her main guns against enemy forces in coastal positions.

Following the cessation of hostilities in the Korean peninsula, the battleship served in the Atlantic and Mediterranean, but the large crew and the expense of maintaining the ship in service saw her returned to the reserve fleet in 1957. She remained idle for another 11 years before being used in the Vietnam War, being the only one of the four Iowa class battleships chosen for reactivation in 1968.

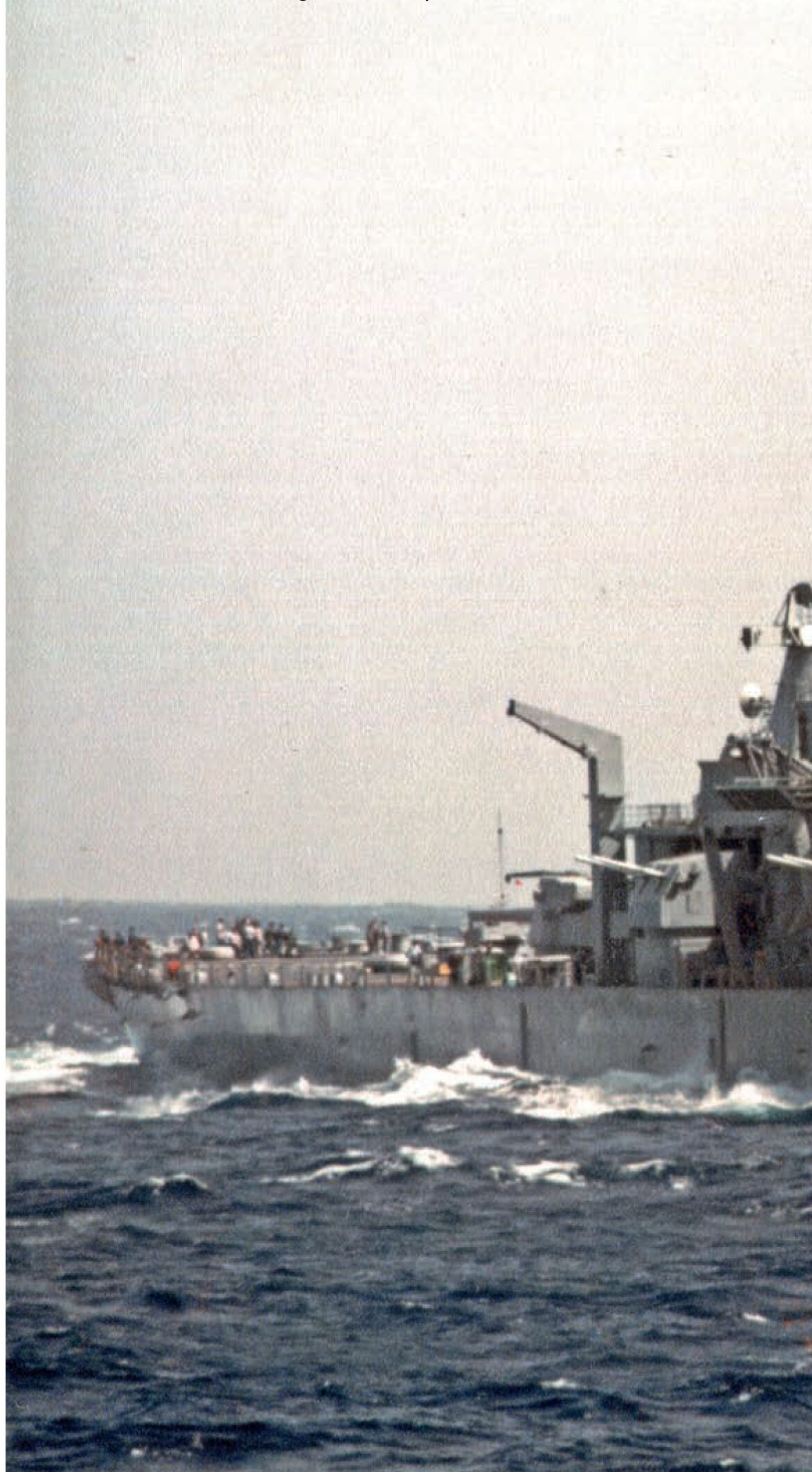
Before her first deployment to Asia, however, the ship was modernised and some of her dated anti-aircraft batteries were removed and replaced with more advanced systems. Her powerful and accurate bombardment assisted US Marines and US Army troops ashore. Upon her return to the United States, New Jersey was, once again, placed in reserve, where she remained until 1983 and the further modernisation programme instigated by President Reagan's naval expansion policy.

She was given anti-ship and land-attack tactical missiles and fitted with improved radar and sensors. During the Lebanese Civil War of the early 1980s, the American battleship remained as a near constant presence offshore. She was later transferred to the Pacific and had a final cruise to the Persian Gulf in the 1990s.

She was decommissioned for the last time on 8 February 1991, but kept in a good standard of repair should the US Marines demand her reactivation. In 2001 USS New Jersey became a museum and memorial ship at Camden, New Jersey.



▲ USS New Jersey (BB-62) bombarding enemy targets near Tuyho, on South Vietnam's central coast, during her last line period, March 1969.





▲ USS New Jersey (BB-62) steams into a Japanese port, during her second Korean War tour, spring 1953.

◀ USS New Jersey (BB-62) during sea trials off the US Pacific Coast, 25 September 1982.



USS MISSOURI (BB-63)

BUILDER New York Navy Yard

DISPLACEMENT 57,540 tons full load

ARMAMENT 9 x 16-inch (406mm), 20 x 5-inch (127mm), 80 x 40mm, 49 x 20mm guns

COMPLETED 11 June 1944

FATE Memorial

The New York Navy Yard in Brooklyn had experience of building complex warships, but the design of USS Missouri was more elaborate than even its staff had previously encountered. On 6 January 1941 work started on building the US Navy's 63rd battleship and one that went on to become a legend. The ship took three years and 23 days to complete, and she was accepted into the US Navy on 11 June 1944, marking her out as the last battleship to be commissioned into the US Navy.

Her massive 16-inch guns were used during three significant World War II battles in the Pacific campaign against the Japanese: the Battle for Iwo Jima, the Battle for Okinawa and the shore bombardments of Hokkaido and Honshu. In 1944 and 1945, aware of the turning tide, the Japanese

resorted to kamikaze suicide attacks against Allied forces.

USS Missouri was frequently targeted, and her gun crews successfully destroyed 11 of the attackers. However, one managed to breach the defences and struck the side of the battleship's armour plated hull, but caused only slight damage.

Following the detonation of the atomic bombs on Hiroshima and Nagasaki, the Japanese surrendered and USS Missouri's after deck became the site for the official surrender ceremony on 2 September 1945 while she was at anchor in Tokyo Bay.

USS Missouri returned home to an uncertain future and spent time in reserve until the Korean War when, once again, a big-gun battleship was required for the naval bombardment role. She, and her three sisters now in reserve, were the only battleships that contributed to the fighting in Korea.

She fired over 3,000 rounds of 16-inch ammunition and participated in operations including the Chosin Reservoir evacuation and the Marine landings at Hungnam and

Samchok. At war's end she returned to the United States and was decommissioned in May 1955. She remained inactive for another 29 years.

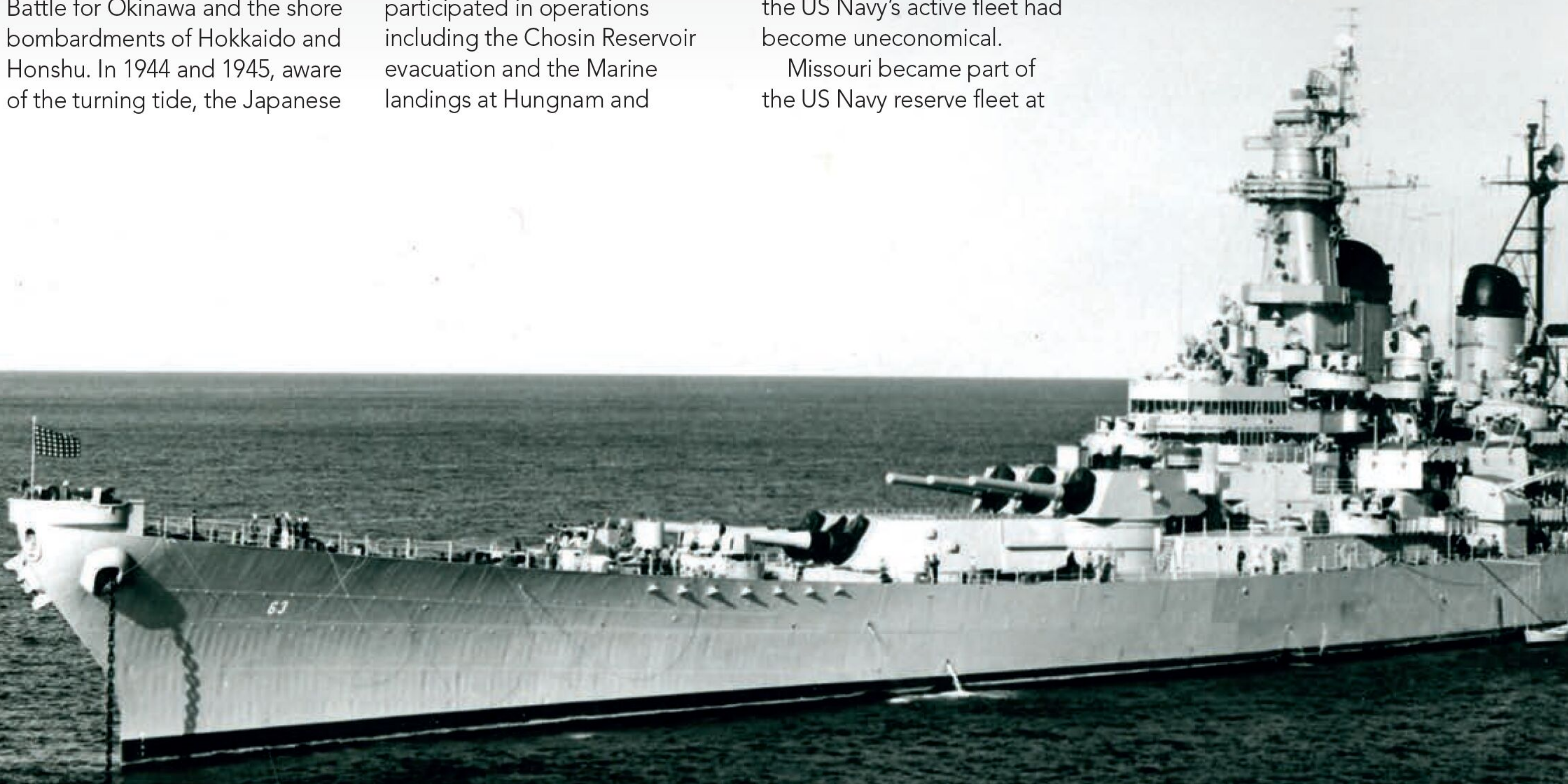
President Ronald Reagan's desire to rebuild the US Navy into a 500-ship fleet saw Missouri taken out of reserve and given a major refurbishment. She was fitted with modern radar and weaponry, including long-range Tomahawk cruise missiles and anti-missile defences. During the Gulf War she fired her guns in anger against Iraqi positions in Kuwait and Iraq.

USS Missouri gained the distinction of being the last battleship in the world to leave service, when she was decommissioned on 31 March 1992 at Long Beach Naval Shipyard. The collapse of the Soviet Union in the early 1990s and the absence of a perceived threat to the US led to drastic cuts in the defence budget, and the high cost of maintaining and operating battleships as part of the US Navy's active fleet had become uneconomical.

Missouri became part of the US Navy reserve fleet at

Puget Sound Naval Shipyard, Bremerton, Washington, until 12 January 1995, when she was struck from the Naval Vessel Register. On 4 May 1998 Secretary of the Navy John H. Dalton signed the donation contract that transferred the ship to the USS Missouri Memorial Association (MMA) of Honolulu.

USS Missouri departed Bremerton, Washington, on 23 May 1998, and arrived at Pearl Harbor on 22 June 1998 to take her place as a memorial near the wreck of USS Arizona, symbolically linking the beginning and end of World War II. She is preserved as the Battleship Missouri Memorial at Ford Island, maintained through ongoing restoration efforts by volunteers, and positioned so that her bow faces the Arizona Memorial without overshadowing it.



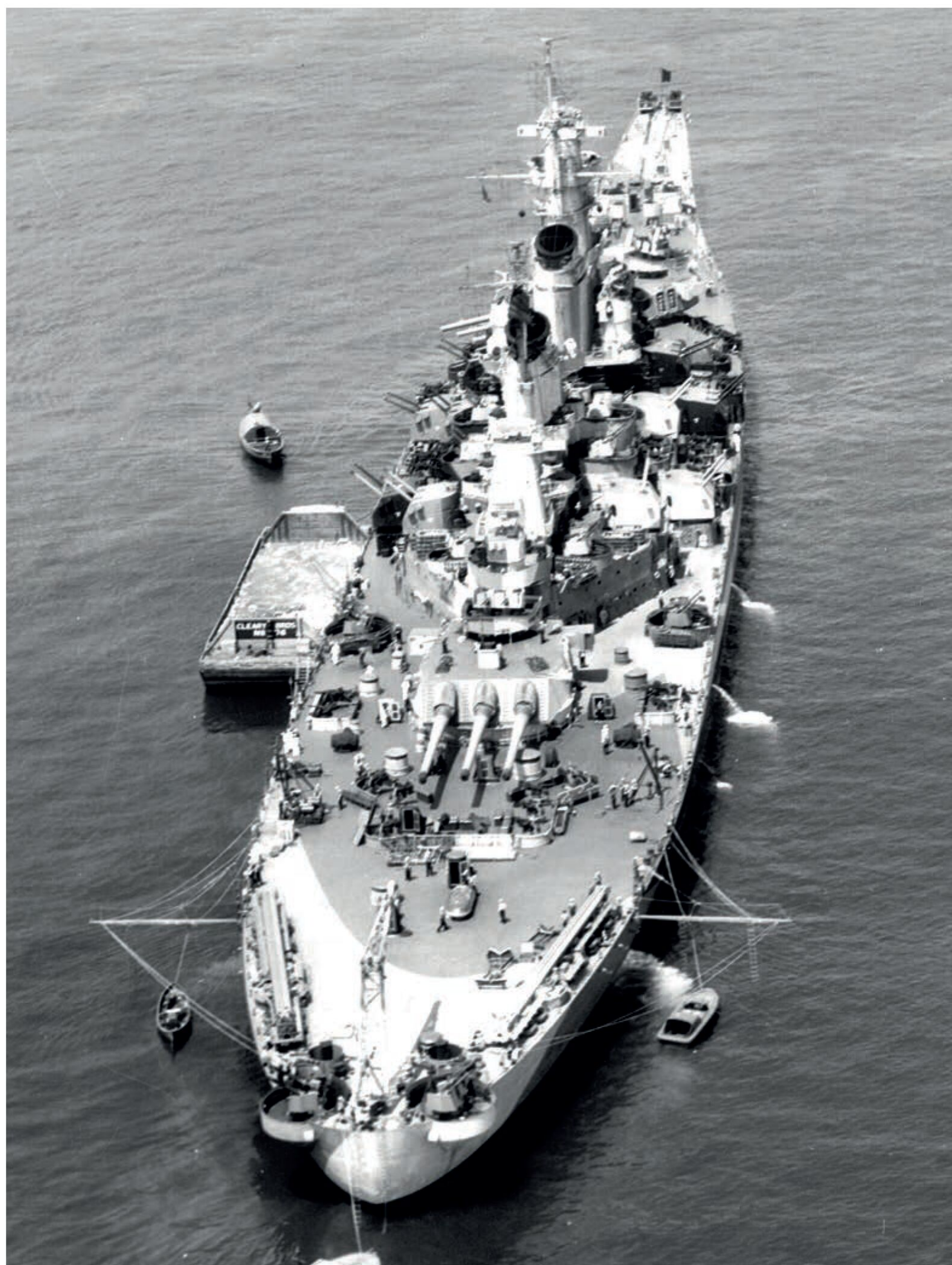


▲ (left) USS Missouri under way in August 1944 shortly after she had entered service.

▲ (right) Crewmen manning the rails of Missouri during her recommissioning ceremony in San Francisco, May 1986

► USS Missouri in New York Harbor, 30 July 1944, with the barge Cleary Bros No.76 alongside and ship's boats moored astern, and a camouflage pattern painted on her deck.

▼ USS Missouri anchored in the outer harbour of Wonsan, Korea, 25 October 1950, with a British destroyer in the background.



USS Wisconsin under way with other warships in the western Pacific during the latter stages of World War II.

BUILDER Philadelphia Naval Shipyard

DISPLACEMENT 57,540tons full load

ARMAMENT 9 x 16-inch (406mm), 20 x 5inch (127mm), 80 x 40mm, 49 x 20mm guns

COMPLETED 16 April 1944

FATE Memorial

USS WISCONSIN (BB-64)

The contract for building USS Wisconsin went to the Philadelphia Naval Shipyard. Her keel was laid was on 25 January 1941, and she was launched on 7 December 1943, being finally completed on 16 April 1944. Five months later, on 9 December 1944, Wisconsin arrived in the Pacific Theatre, joining Admiral Halsey's Third Fleet in the Caroline Islands.

Her entry into service was a baptism of fire during the liberation of the Philippines, for which she was assigned to protect the fast aircraft carriers of Task force 38. By early 1945 USS Wisconsin had survived

numerous kamikaze attacks as she headed towards Tokyo, having operated off Iwo Jima and Okinawa in support of the US Marines' amphibious landings, before closing to target the Japanese home islands.

Following Japan's formal surrender, Wisconsin arrived in Tokyo Bay three days later to start the process of bringing US and Allied personnel back to America as part of Operation Magic Carpet. During 1946 and 1947 the battleship was utilised for training cruises to South America and Europe.

In 1948 she was decommissioned into the reserve fleet, but was

reactivated two years later to provide naval gunfire support for US forces in the Korean War. During the conflict she received a direct hit from a North Korean shell, the first time that she had been hit by an enemy projectile. Little damage was incurred, but three men manning a 40mm gun battery were injured. USS Wisconsin replied by firing a full 16-inch gun broadside.

After the Korean War she resumed her training role in the Atlantic, during which time she grounded in 1955. On 5 May 1956 she rammed the destroyer USS Eaton in thick fog off the US Eastern Seaboard. Her bow needed to be replaced, but fortuitously her incomplete sister Kentucky's bow was substituted for the crumpled one.

On 8 March 1958 Wisconsin was returned to the reserve fleet where she remained until the early 1980s. Her modernisation was more extensive than that of her sisterships, as her hull and equipment were in a worse condition. The refit was completed on 28 October 1988.

During the First Gulf War, USS Wisconsin and sistership USS Missouri launched cruise missile

strikes on Iraq, together with decoying naval bombardment missions on Iraqi positions in Kuwait. She fired her last salvo of the war on 28 February 1991.

After the end of the Cold War and with major US defence budget reductions, USS Wisconsin was decommissioned on 30 September 1991. She was briefly removed from the Naval Vessel Register (NVR) in 1995, moved to Norfolk Naval Shipyard in 1996, and reinstated on the NVR in 1998. In December 2000 Wisconsin was towed to Norfolk and berthed at the Nauticus museum, opening to the public in April 2001 while still Navy owned.

Under US law, Wisconsin was required to be preserved in a condition suitable for potential reactivation. Although modernisation costs made reactivation impractical, these measures ensured her long term structural preservation.

On 14 December 2009 the Navy formally transferred Wisconsin to the City of Norfolk, ending her standby requirement, and a formal ceremony transferring the ship to the city of Norfolk took place on 16 April 2010.



USS Buck (DD-761), USS Wisconsin and USS Saint Paul (CA-73) steaming in close formation off the Korean coast, February 1952.



USS Wisconsin at sea, circa 1990. Following her move into preservation in the 2000s, she was later recognised for her historical significance with inclusion on the National Register of Historic Places in March 2012.

USS ILLINOIS (BB-65)

BUILDER Philadelphia Navy Yard

DISPLACEMENT Never completed

ARMAMENT Never completed

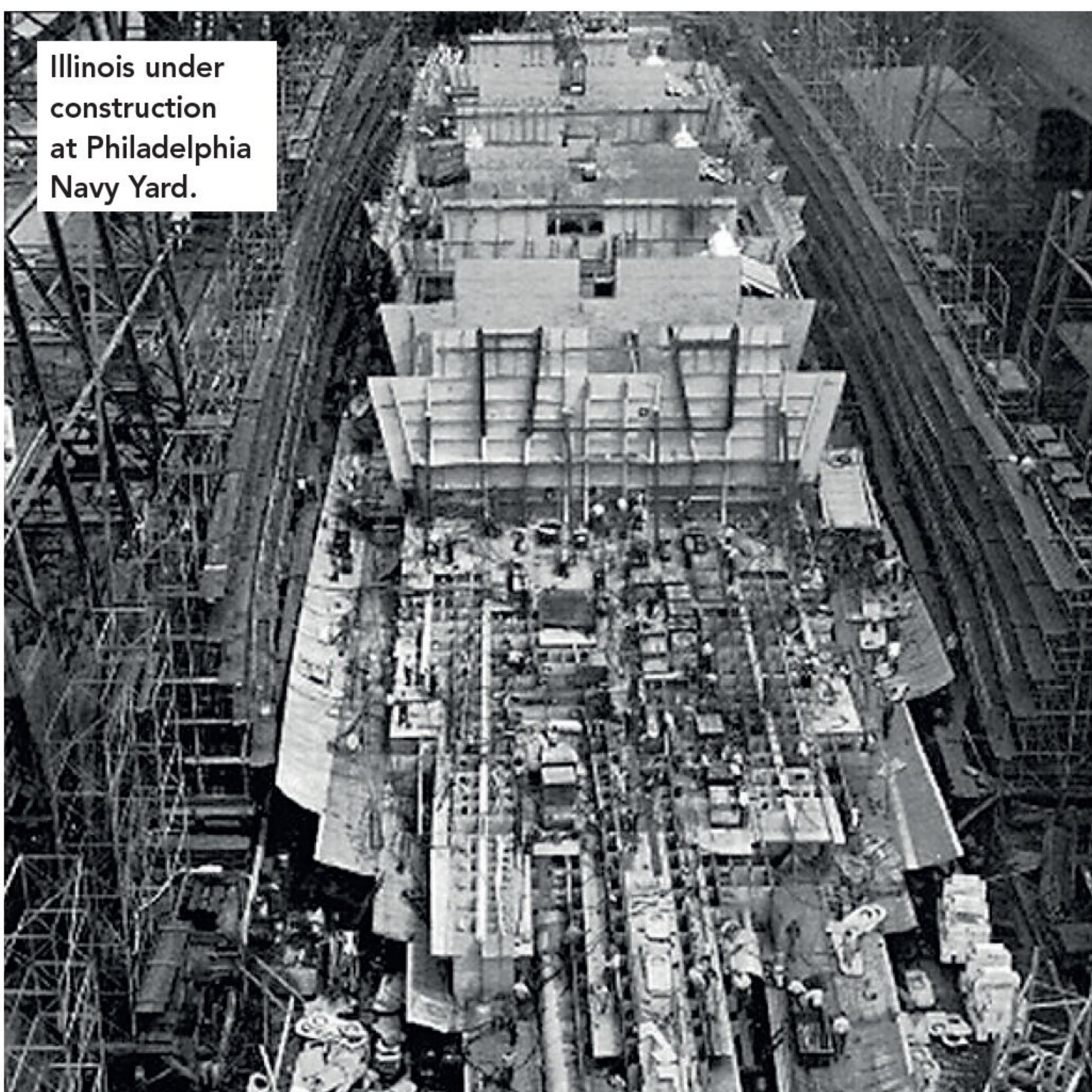
FATE Cancelled 11 August 1945 and what little work had been completed was broken up on slip way

Like sister ship USS Kentucky, USS Illinois became a casualty of the American success against the Imperial Japanese Navy in the Pacific. The battleship was ordered from Philadelphia Navy Shipyard

and laid down on 6 December 1942, but was never completed.

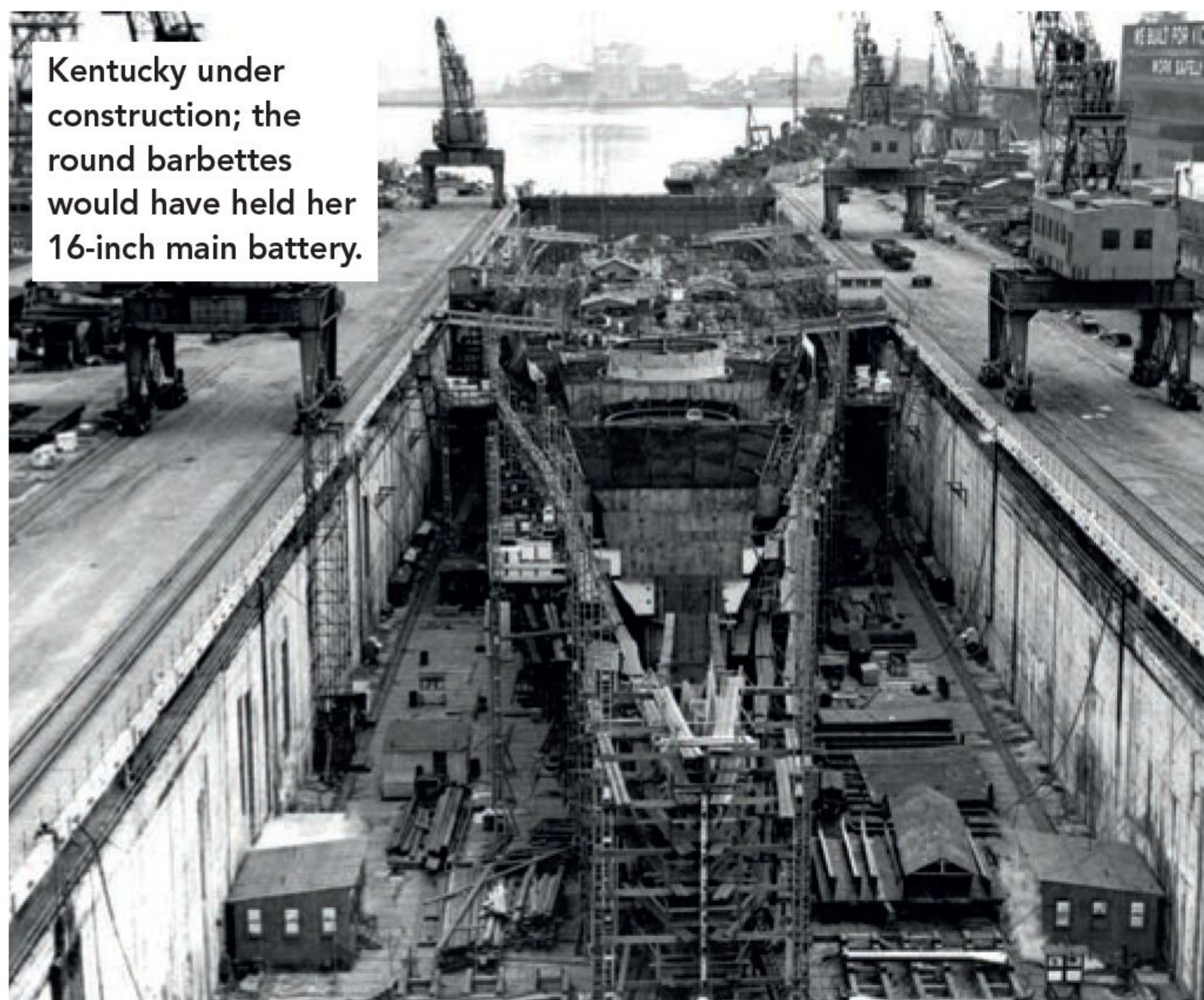
After the successful outcome of the Battle of Midway, the project was cancelled on 11 August 1945. The focus of warship construction shifted from battleships to aircraft carriers and what little construction work that had been undertaken on USS Illinois was soon removed from the slipway to make way for construction of other warships.

Illinois under construction at Philadelphia Navy Yard.



USS KENTUCKY (BB-66)

Kentucky under construction; the round barbettes would have held her 16-inch main battery.



BUILDER Norfolk Navy Yard

DISPLACEMENT Never completed

ARMAMENT Never completed

FATE Incomplete hull sold for breaking up September 1958

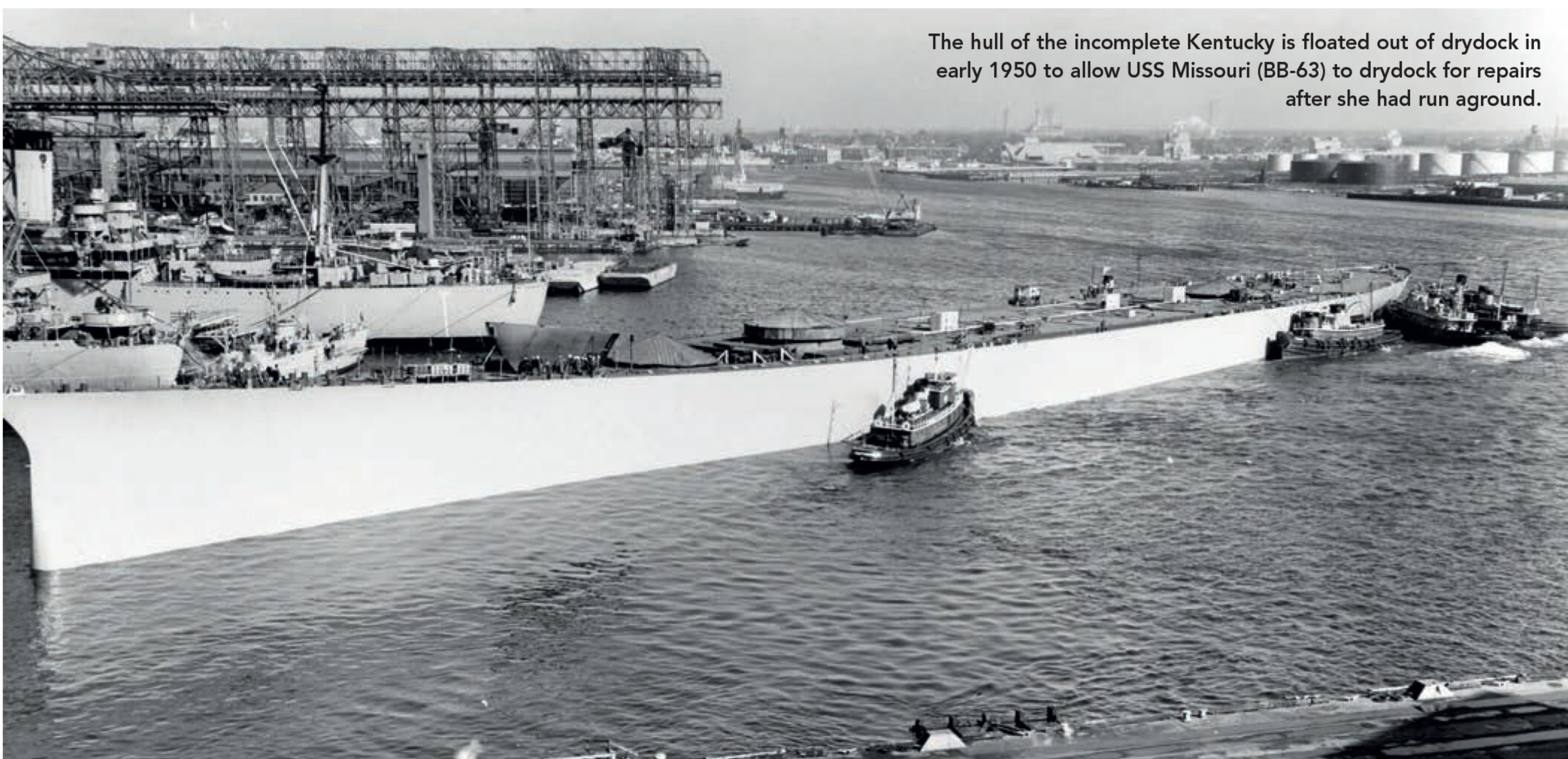
The sixth and last of the Iowa class battleships was intended to be BB-66, named USS Kentucky. Construction work commenced on 7 March 1942 at Norfolk Navy Yard, and progressed well, but even by the end of 1943 it was apparent that the war against Japan would soon be over and battleships such as the future USS Kentucky

would be unnecessary.

Initially, work slowed as other priorities took its place, and then when the war was over work stopped completely. But it was not until 20 January 1950 that the part of the ship which had been completed was launched without ceremony, and then the hull was subsequently scrapped in September 1958.

The story of the American battleships would not be complete without mentioning the class of super battleships that was intended to follow on from the Iowa class.

The hull of the incomplete Kentucky is floated out of drydock in early 1950 to allow USS Missouri (BB-63) to drydock for repairs after she had run aground.



22 MONTANA CLASS

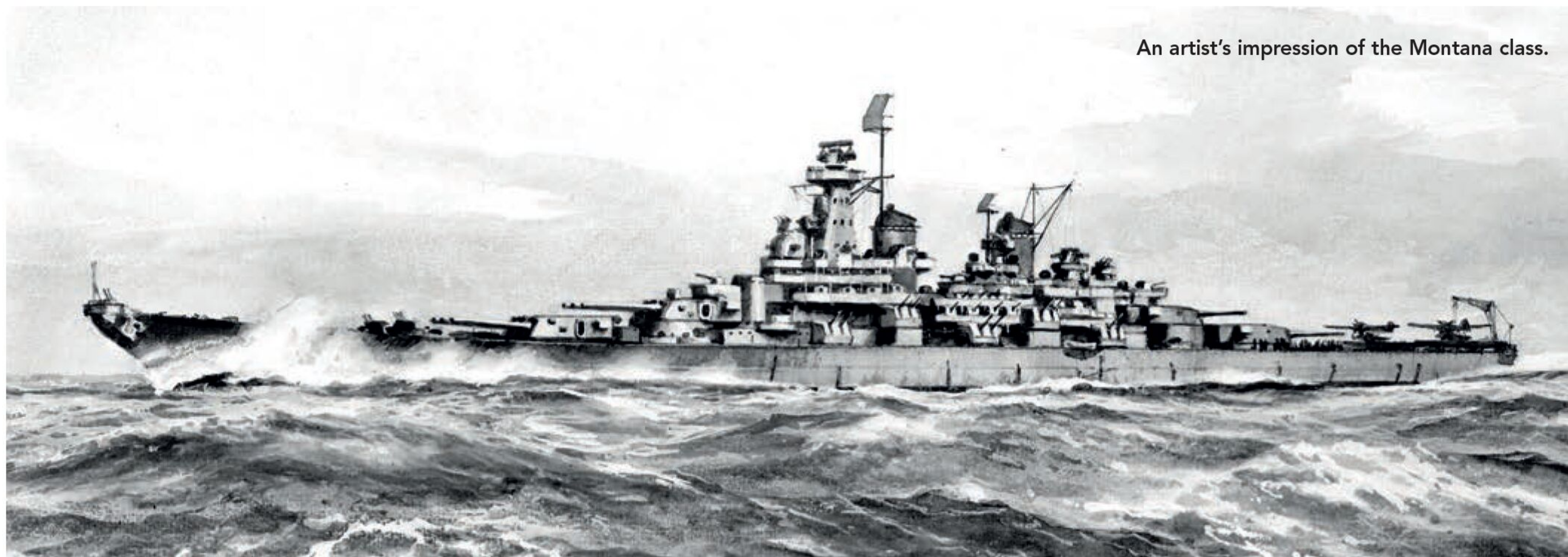
The Montana class battleships would have followed the Iowa class into service had they been built. The Montana class was envisaged as the pinnacle of naval might, but in reality they were already obsolete by the end of World War II, although many in the US Navy held out hope for almost a decade of their resurrection in an altered form.

The Montanas would have been giant vessels of around 65,000 tons, with a

length of 921ft and a beam of 121ft, and it is doubtful that the Montana class would have fitted through the locks of the Panama Canal. Each ship was to be armed with twelve 16-inch guns, three more than the number on the Iowas. Secondary armament would have included 20 five-inch dual-purpose guns, plus hundreds of 40mm and 20mm anti-aircraft guns. Like the Iowas, the Montanas would have been fast with a top speed of 30 knots,

more than capable of keeping up with task groups centred on aircraft carriers.

As the war in the Pacific and in Europe swung in the Allies' favour, the four projected Montana class ships, USS *Montana* (BB-67), USS *Ohio* (BB-68), USS *Maine* (BB-69) and USS *New Hampshire* (BB-70), were cancelled on 21 July 1943, as the steel was required for higher priority projects. What work that had started was abandoned and recycled.



An artist's impression of the Montana class.

23 LEXINGTON CLASS BATTLECRUISERS

The United States, unlike European nations such as Britain, Germany, France and Italy, chose to be wary of the battlecruiser concept of fast, powerfully armed but relatively lightly protected vessels. This is not to say that they did not invest in the idea and at one point designed and ordered six of a proposed Lexington design, which had been highly influenced by the famous British battlecruiser HMS *Hood*.

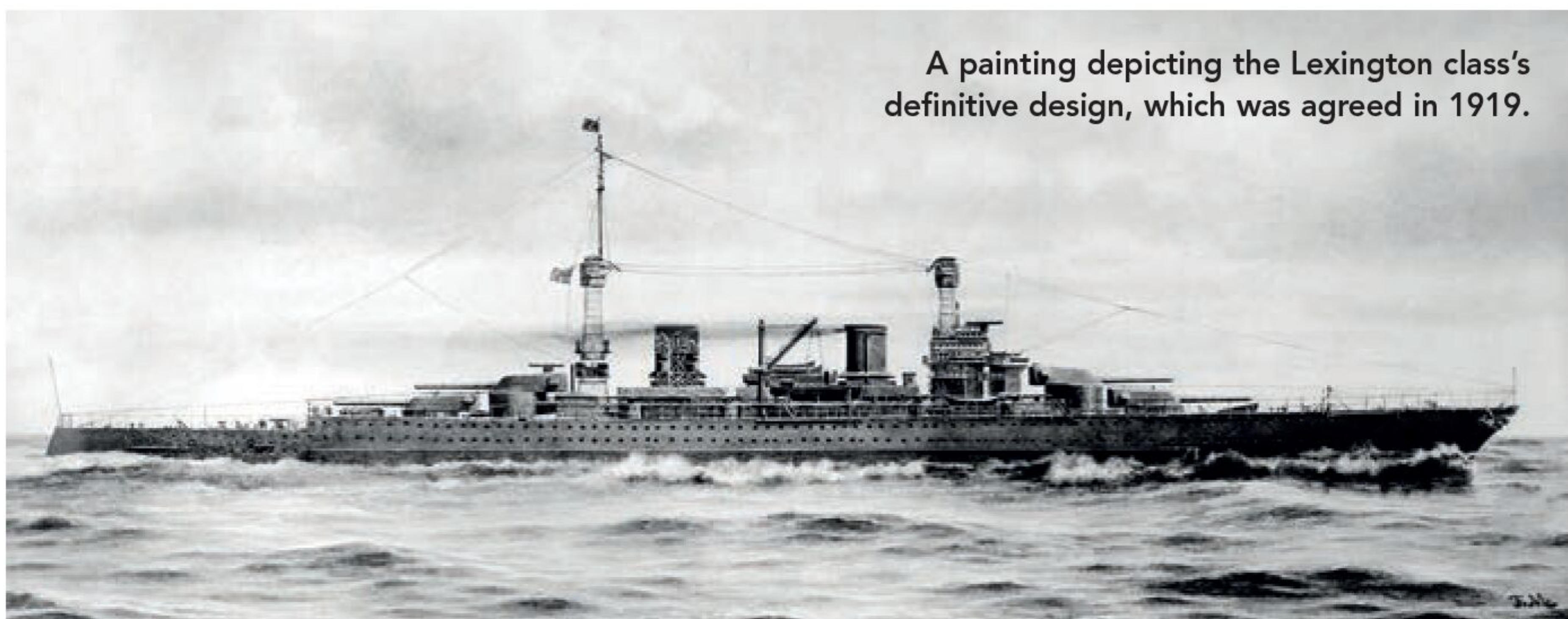
The passing of the Naval Act of 1916 saw the six battlecruisers included in the planned construction programme but their building was deferred as more pressing needs, such as anti-submarine and escort ships, were required urgently. The concept was recast several times, but generally most designs had a ship with a main armament of around ten 14-inch guns and secondary battery of 18 five-inch guns and a speed of up to 35 knots.

Eventually the design settled on eight 16-inch guns and 16 six-inch guns with a slightly slower speed of 33.25 knots. To attain this still impressive speed, much of the internal space of the ships would be given over to propulsion. However, finding suitably powerful boilers and

turbine technologies to match the requirements proved difficult.

The ships were ordered in the 1920s: USS *Lexington* was laid down at the Fore River Shipyard on 8 January 1921, USS *Constellation* on 18 August 1920 at Newport News Shipbuilding; USS *Saratoga* by New York Shipbuilding at Camden, with the first steel being laid on the slipway on 25 September 1920; USS *Ranger* was laid down at Newport News Shipbuilding on 23 June 1921; and construction of both USS *Constitution* and USS *United States* went to the Philadelphia Naval Shipyard, where they were laid down on 25 September 1920.

The Washington Naval Treaty of 1922, however, put to rest any remaining American ambitions for building battlecruisers. To comply with the treaty, work on the ships already ordered and under construction had to cease. Four of the ships were cancelled on 17 August 1923. Two, *Lexington* and *Saratoga*, were allowed to continue building, although redesigned as aircraft carriers. USS *Lexington* saw service, but was sunk during the Battle of the Coral Sea on 8 May 1942, while sistership USS *Saratoga* survived the war only to be destroyed during the Atomic bomb tests at Bikini Atoll in the Pacific during Operation Crossroads.



A painting depicting the Lexington class's definitive design, which was agreed in 1919.

24 ALASKA CLASS BATTLECRUISERS

The Alaska class design was developed as a battlecruiser, although the ships would probably have been better described as heavy cruisers. The concept for the class emerged in the late 1930s as part of the US Navy's General Board's broader discussions on naval expansion. At the time, the Navy was considering various ship designs to maintain superiority over potential adversaries.

In 1938 the focus of attention for US Navy ship designers was the threat posed by Japan's expanding fleet of heavy cruisers. The General Board saw the potential for the new design to serve

in numerous roles from fleet screening to challenging commerce raiders. The Alaska class ships were intended to be faster and more heavily armed than any existing cruiser, but not as heavily armoured as a battleship.

The final design of the Alaska class reflected their intended role as fast, heavily armed ships. They were 808ft (246.3m) overall, with a beam of 91ft (27.7m) and a draft of 31.3ft (9.5m). Their standard displacement was approximately 27,000 long tons, while their full load displacement was around 34,253 long tons.

They were armed with nine 12-inch

(305mm)/50 calibre Mark 8 guns, mounted in three triple turrets, two forward and one aft, providing the planned ships with the firepower to outmatch any cruiser afloat at the time.

Additionally, the ships were armed with 12 five-inch (127mm)/38 calibre dual-purpose guns, as well as a variety of anti-aircraft guns, including 40mm Bofors and 20mm Oerlikon cannons. The four General Electric geared steam turbines could power the ships at speeds of up to 33 knots, making them capable of keeping pace with the then new Iowa class battleships.

USS ALASKA (CB-1)

BUILDER New York Shipbuilding

DISPLACEMENT 34,254 tons full load

ARMAMENT 9 x 12-inch (305mm), 12 x 5-inch (127mm), 56 x 40mm, 34 x 20mm guns

COMPLETED 1944

FATE Broken up July 1961

USS Alaska was authorised on 19 July 1940 with the contract for her construction awarded to New York Shipbuilding of Camden, New Jersey on 9 September 1940. The first steel was laid on 17 December 1941 and she was launched on 15 August 1943. The cruiser was completed in June

1944, by which time the war in the Pacific had turned decisively in the Allies' favour. Alaska was commissioned on 17 June.

After work-up and a shakedown cruise and repairs, she reached San Diego on 12 December 1944. In January 1945 she joined Task Group 58.5 as escort for the carriers USS Enterprise and USS Saratoga. Later she supported operations at Iwo Jima, where she targeted Japanese defenders for 19 days.

Her next task was at the Battle of Okinawa, operating with the carriers USS Yorktown and USS Intrepid. Alaska's gunners successfully brought down a

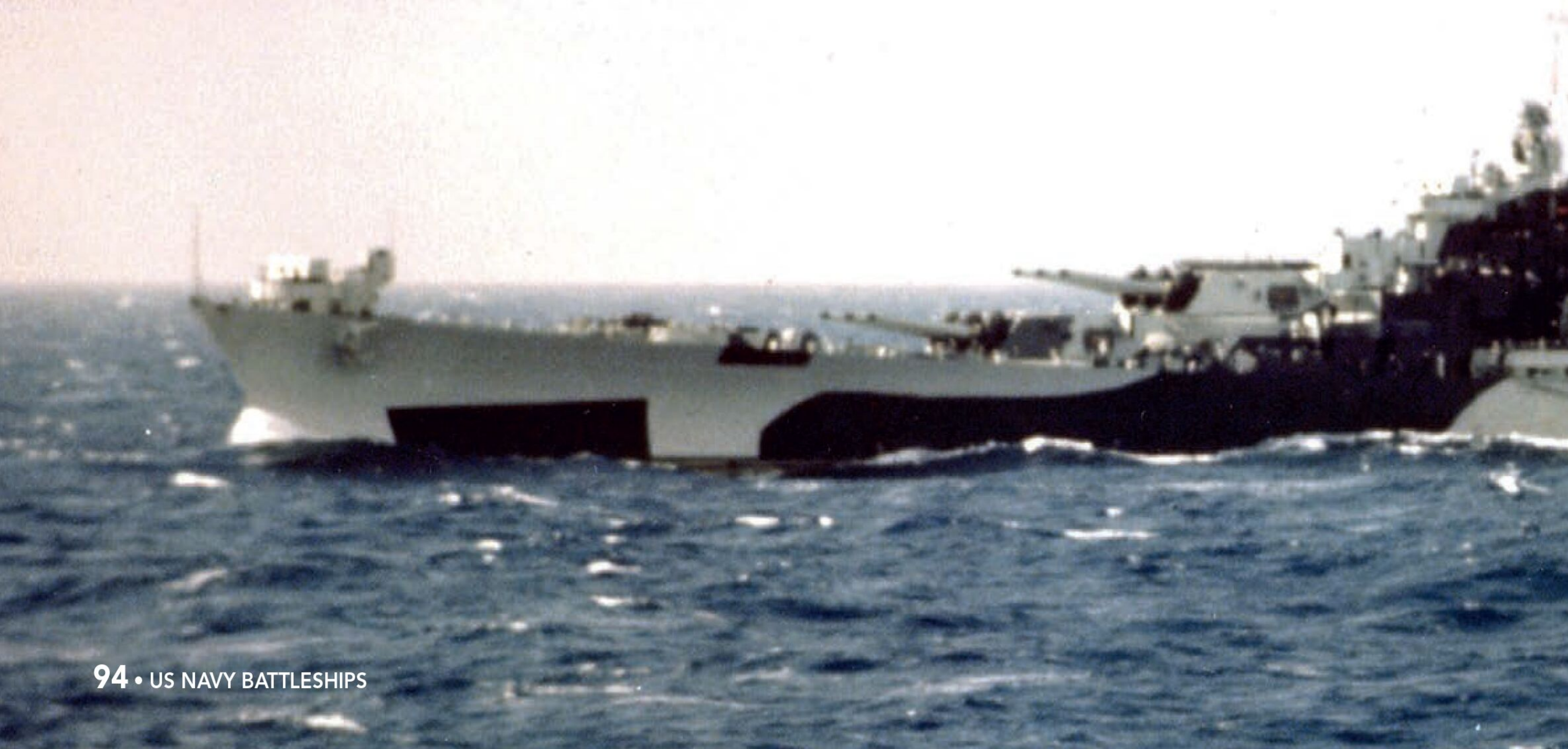
Yokosuka P1Y bomber which was making a kamikaze attack against USS Intrepid, before bringing down a second enemy plane.

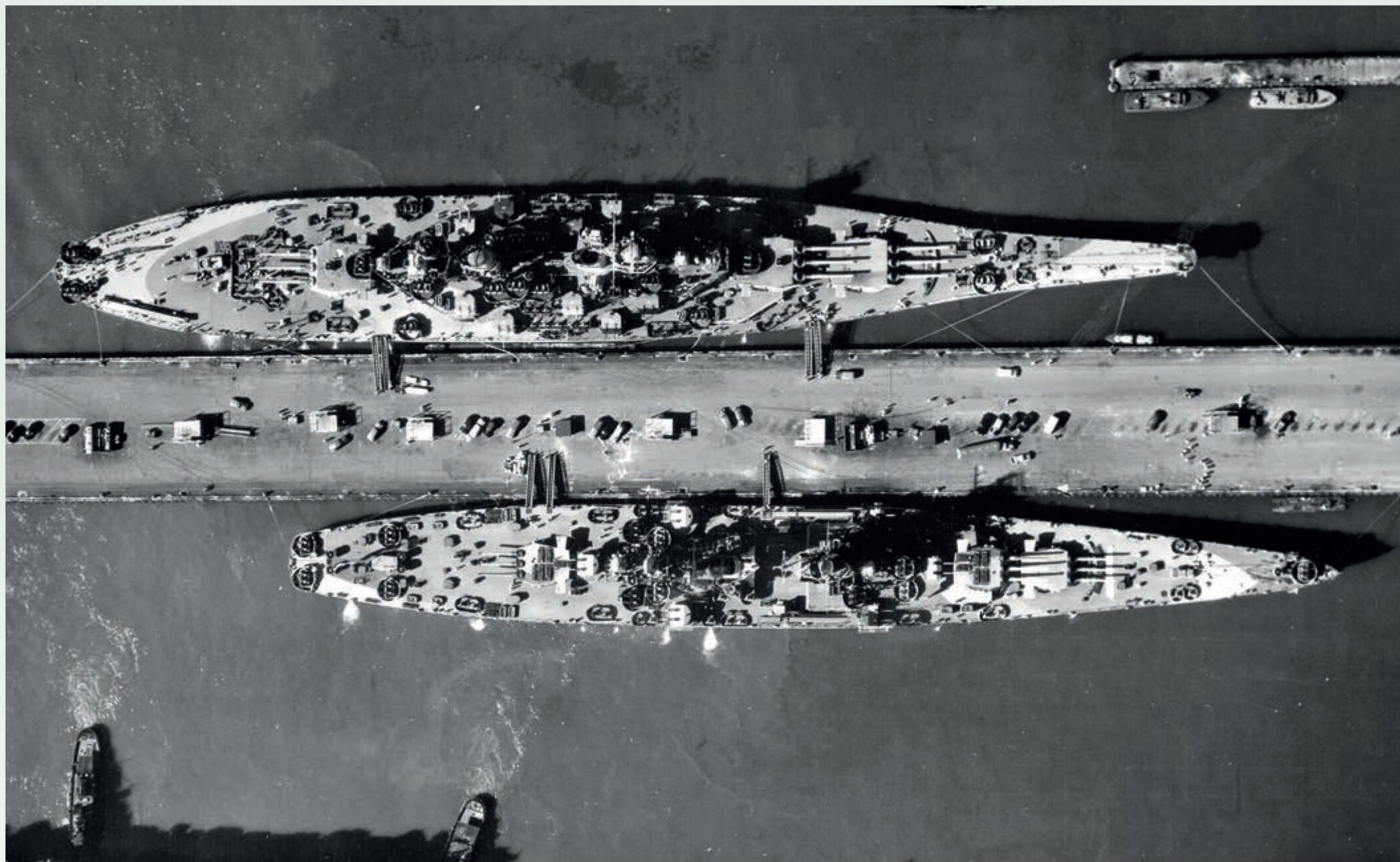
When kamikaze aircraft crippled the aircraft carrier USS Franklin, Alaska and sistership USS Guam, plus two cruisers and destroyers, escorted her to Ulithi. On 27 May 1945, with Guam, she bombarded Minamidaito. Over the course of the following week, the warship shot down a further four aircraft and assisted in the destruction of a further five.

Alaska continued to operate in the East China and Yellow Seas until the end of the war. She took part in the repatriation of American service personnel to the United States as part of Operation Magic Carpet.

After disembarking the service personnel at San Francisco, she transited to the Atlantic and arrived at Boston Navy Yard to be prepared for the reserve fleet at Bayonne. She was kept in good order but not decommissioned until 17 February 1947.

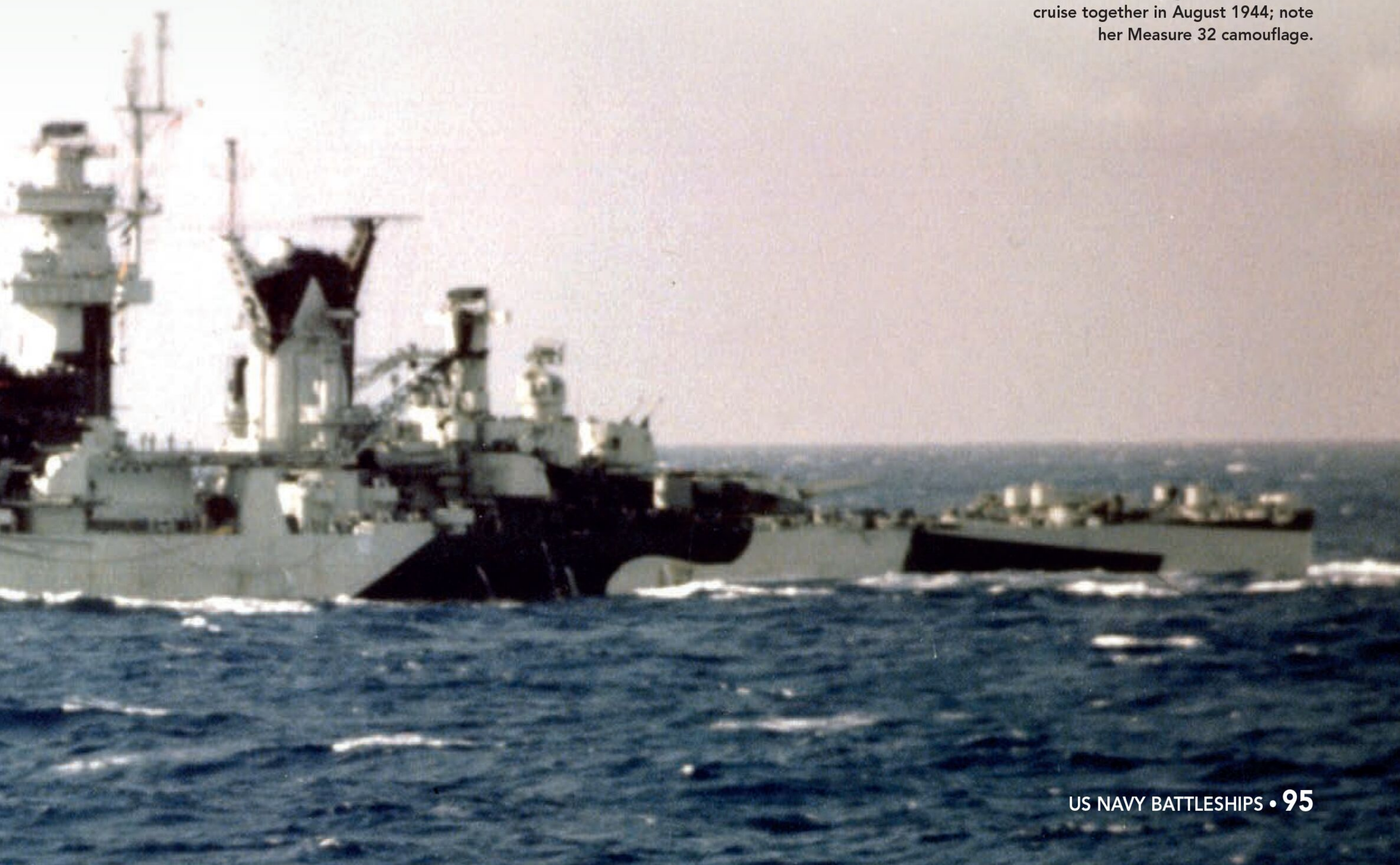
Numerous projects were proposed to repurpose the virtually brand new warship, some involving removing most of her main guns and installing missile launchers in their place. The cost, \$160 million (1958 prices), however, was prohibitive. The conversion plans were abandoned, and the hulk was declared surplus. It was sold for breaking up on 30 June 1960 to the Lipsett Division of Luria Brothers located in Kearny, New Jersey.





▲ USS Missouri (BB-63) and USS Alaska (CB-1) at Norfolk Naval Shipyard, Virginia in 1944.

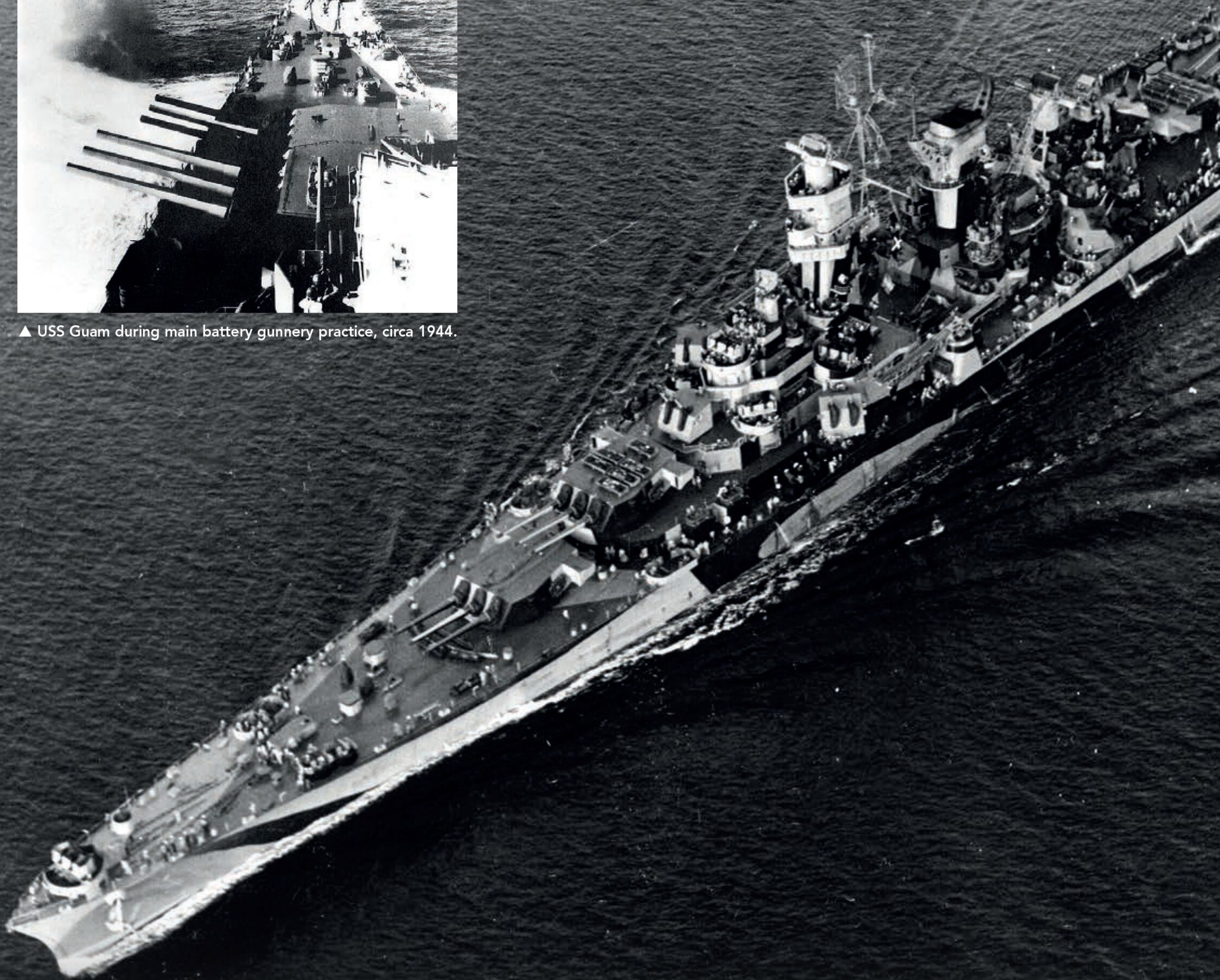
◀ USS Alaska (CB-1) photographed from USS Missouri (BB-63) off the US east coast during their shakedown cruise together in August 1944; note her Measure 32 camouflage.



USS GUAM (CB-2)



▲ USS Guam during main battery gunnery practice, circa 1944.



BUILDER New York Shipbuilding

DISPLACEMENT 34,254 tons
full load

ARMAMENT 9 x 12-inch (305mm),
12 x 5-inch (127mm), 56 x 40mm,
34 x 20mm guns

COMPLETED 1944

FATE Broken up September 1961

.....
USS Guam was ordered on
the same day as her sister
ship, USS Alaska. USS Guam was
laid down on 2 February 1942

at the New York Shipbuilding
yard, launched on 12 November
1943, and commissioned into
the US Navy on 17 September.
She was powered by eight
Babcock & Wilcox boilers
supplying four General Electric
steam turbines producing about
150,000shp, enabling a top speed
of 33 knots to be achieved.

Her operational career
largely mirrored that of her
sister Alaska. She joined Alaska

on station at Ulithi on 13 March
1945 as a unit of Task Force 58,
and took part in raids against
the Japanese islands of Kyushu
and Shikoku. Like her sister, she
fought off numerous kamikaze
attacks and, together with
Alaska, bombarded the airfield
on Minamidaito before going on
to support operations off Nansei
Shoto and Oki Daito.

In the immediate aftermath of
the war USS Guam flew the US

flag across the region as part of
the North China Force, visiting
numerous important ports,
including Qingdao, Port Arthur,
Dalian and Jinsen in Korea as
part of the force of occupation.

After carrying US Army
personnel home to Bayonne,
New Jersey, the battlecruiser
remained alongside and was
decommissioned from service
on 17 February 1947, after
less than four years of service.

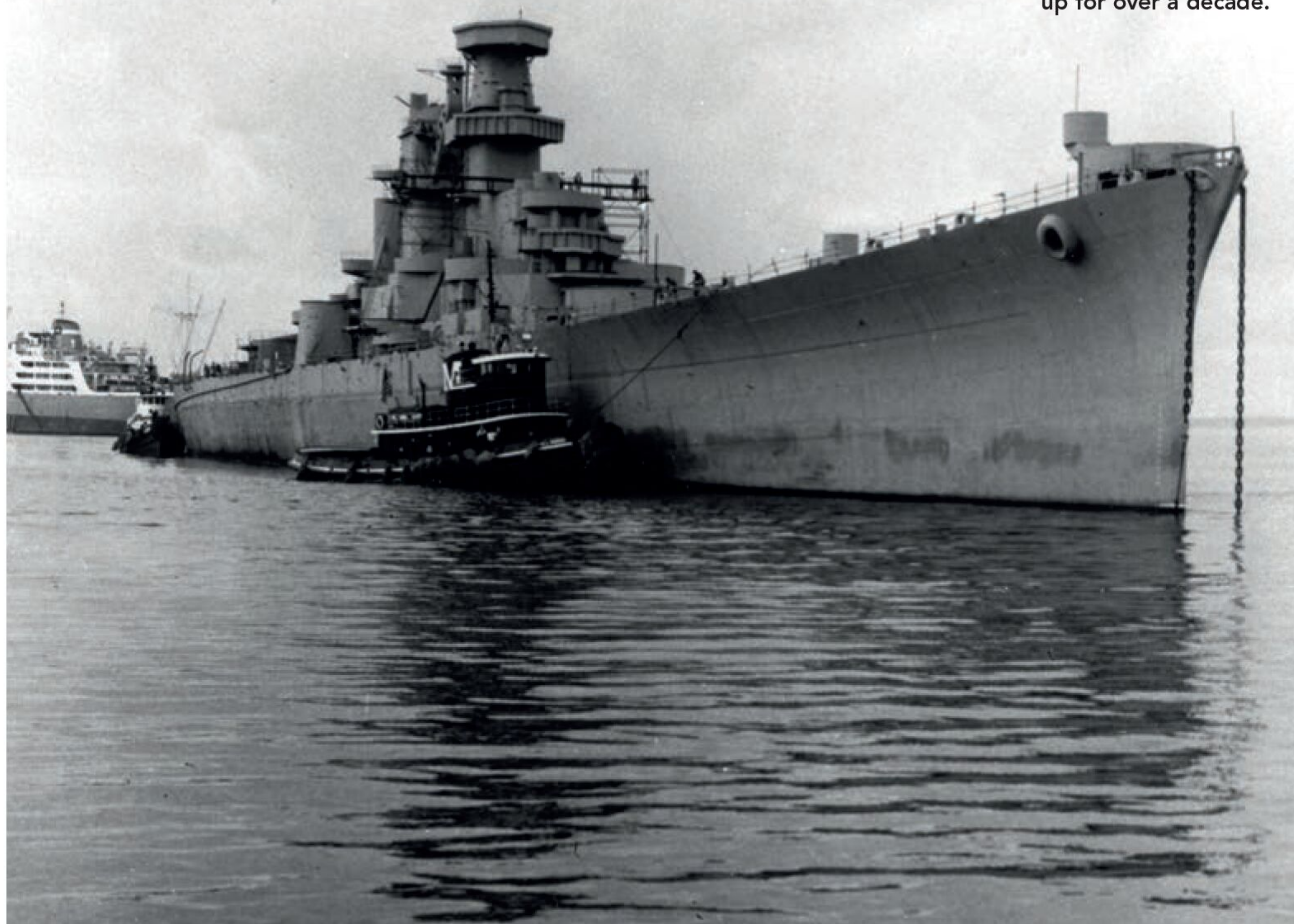


◀ USS Guam under way during trials on 13 November 1944. She was commissioned on 17 September 1944 at New York Shipbuilding, after which she completed shakedown trials off Trinidad before joining the Pacific Fleet in early 1945.

Proposals were made to convert her and USS Alaska into guided missile cruisers in the 1950s, but these came to nothing and, instead, Guam was sold for \$423,076 on 24 May 1961 for breaking to Boston Metals Company in Baltimore. In total USS Guam had an operational with the US Navy lasting just 29 months.

USS HAWAII (CB-3)

USS Hawaii being towed away for scrapping on 20 June 1959. Construction work on the ship was suspended in 1947, and she remained laid up for over a decade.



BUILDER New York Shipbuilding
DISPLACEMENT Never completed
ARMAMENT Never completed
FATE Scrapped 1960

The keel of USS Hawaii was laid on 20 December 1943, almost two years after that of her sistership USS Guam. The reasoning behind her continued construction was dubious at best as the requirement for the vessel was no longer evident with the war in the Pacific turning in the Allies's favour. But on 11 March 1945 the incomplete hull was launched to clear the slipway.

There remained a small hope that the large hull could be repurposed as a missile arsenal ship or even a command ship, but this was not to be, and instead, after many years being laid up in reserve, the hulk was sold for demolition in 1960 having never entered service. The orders for the last trio, USS Philippines, USS Puerto Rico and USS Samoa, were all cancelled on 24 June 1943.

USS Hawaii leaving the launching ways at the New York Shipbuilding Corp, Camden, New Jersey on 3 November 1945.



INDEX

Battleship	Pennant	Completed	Left Service	Page
Alabama	BB-8	1900	1924	23
Alabama	BB-60	1942	1947	82
Alaska	CB-1	1944	1947	94
Arizona	BB-39	1916	1941	61
Arkansas	BB-33	1912	1946	51
California	BB-44	1921	1947	67
Colorado	BB-45	1923	1947	68
Connecticut	BB-18	1906	1922	34
Delaware	BB-28	1910	1924	46
Florida	BB-30	1911	1931	48
Georgia	BB-15	1906	1923	30
Guam	CB-2	1944	1961	96
Hawaii	CB-3	—	—	97
Idaho	BB-24	1908	1914	43
Idaho	BB-42	1919	1947	65
Illinois	BB-7	1901	1958	22
Indiana	BB-1	1895	1919	15
Indiana	BB-58	1942	1963	79
Iowa	BB-4	1897	1923	18
Iowa	BB-61	1943	1958	84
Kansas	BB-21	1907	1921	37
Kearsage	BB-5	1900	1955	20
Kentucky	BB-6	1900	1920	21
Louisiana	BB-19	1906	1921	35
Maine	BB-10	1902	1920	25
Maryland	BB-46	1921	1947	69
Massachusetts	BB-2	1896	1921	16
Massachusetts	BB-59	1942	1947	80
Michigan	BB-27	1909	1922	45
Minnesota	BB-22	1907	1921	38
Mississippi	BB-23	1908	1921	42
Mississippi	BB-41	1917	1956	64

Battleship	Pennant	Completed	Left Service	Page
Missouri	BB-11	1901	1922	26
Missouri	BB-63	1944	1955	88
Montana*	BB-51	—	—	
Nebraska	BB-14	1907	1923	29
Nevada	BB-36	1916	1946	56
New Hampshire	BB-25	1908	1923	40
New Jersey	BB-16	1906	1925	31
New Jersey	BB-62	1943	1957	86
New Mexico	BB-40	1918	1946	62
New York	BB-34	1914	1946	53
North Carolina	BB-55	1941	1947	75
North Dakota	BB-29	1910	1931	47
Ohio	BB-12	1904	1923	27
Oklahoma	BB-37	1916	1941	58
Oregon	BB-3	1896	1919	17
Pennsylvania	BB-38	1916	1946	60
Round Island	BB-17	1906	1923	32
South Carolina	BB-26	1910	1922	44
South Dakota	BB-57	1942	1947	78
Tennessee	BB-43	1920	1947	66
Texas	BB-35	1914	1948	54
Utah	BB-31	1911	1931	49
Vermont	BB-20	1906	1920	36
Virginia	BB-13	1906	1920	28
Washington	BB-48	1921	1924	71
Washington	BB-56	1941	1947	76
West Virginia	BB-48	1923	1947	72
Wisconsin	BB-9	1901	1922	24
Wisconsin	BB-64	1944	1958	90
Wyoming	BB-32	1912	1930	50

* Both Hawaii and Montana were authorised, but cancelled before construction had been completed



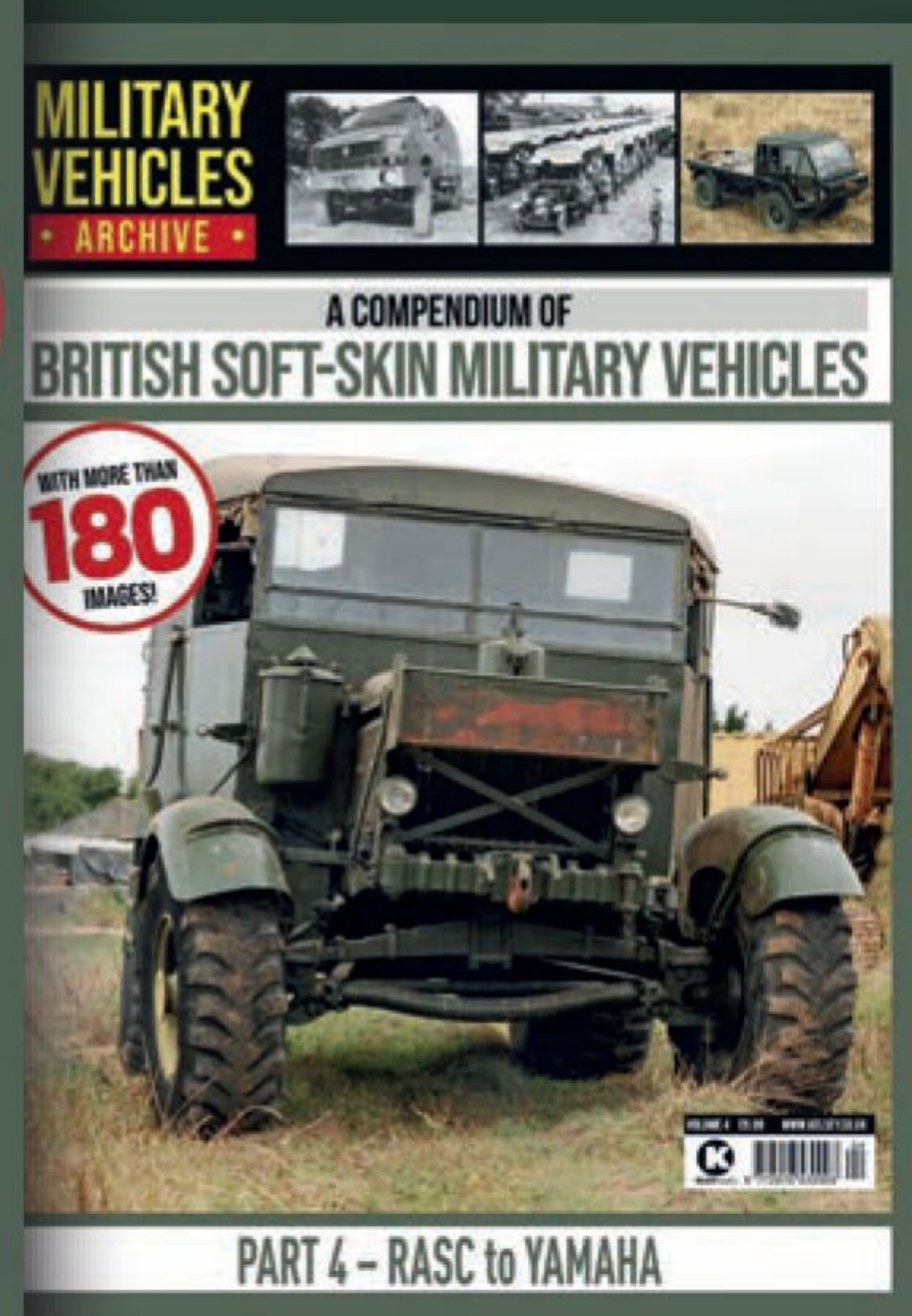
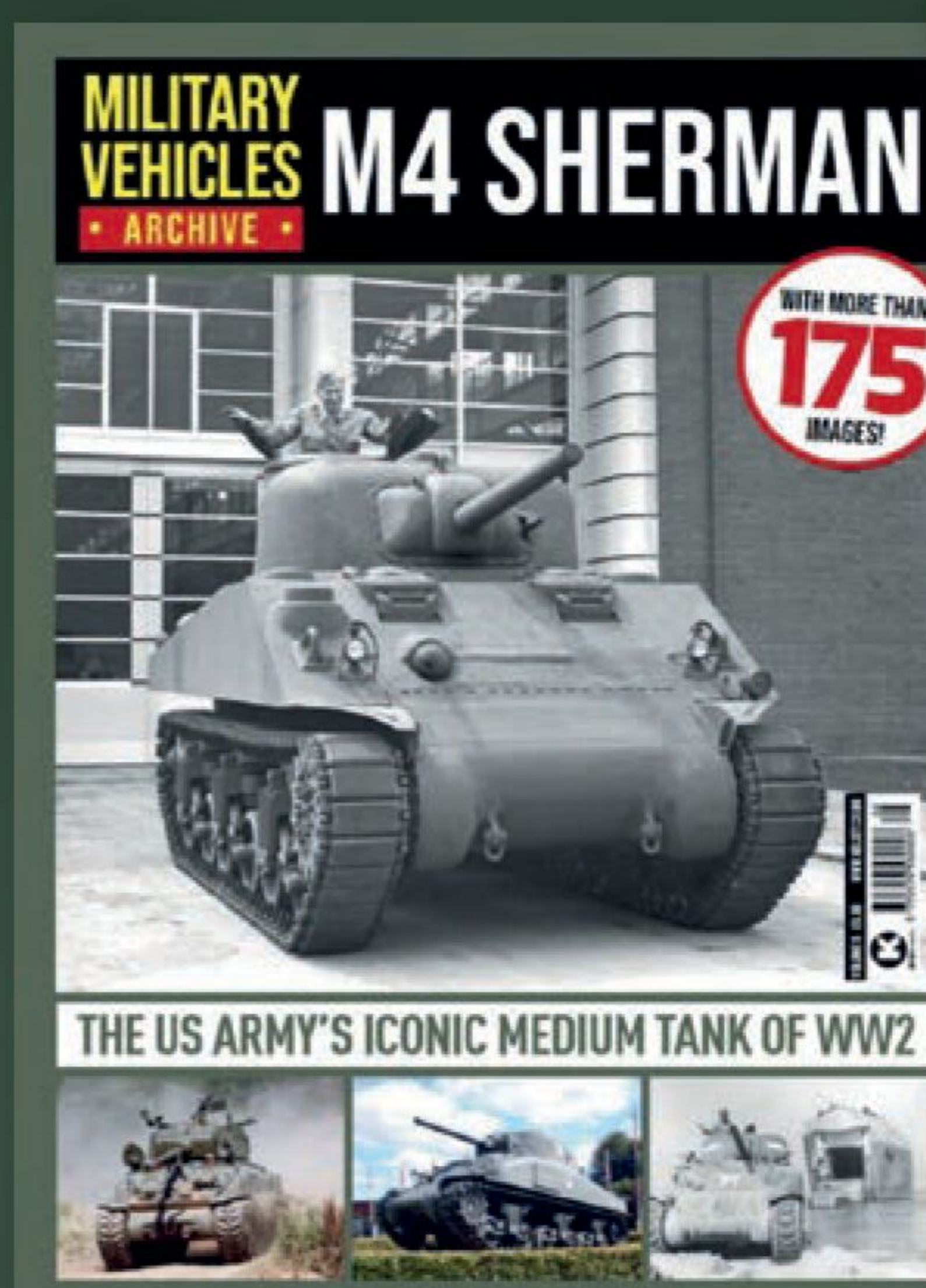
Older warships in the Reserve Basin, 18 November 1919: at the front are, left to right, USS Missouri (BB-11); one Connecticut class battleship; USS Michigan (BB-27); and USS Saint Louis (C-20).

MILITARY VEHICLES

• ARCHIVE •

**ORDER
NOW**

COMPLETE YOUR COLLECTION



**AUTHORITATIVELY WRITTEN AND
COMPREHENSIVELY ILLUSTRATED SERIES
EXPLORING A RANGE OF MILITARY VEHICLES**

SCAN ME



VISIT SHOP.KELSEY.CO.UK/MVA-ISSUES

THE DEFINITIVE GUIDES FOR NAVY ENTHUSIASTS

Dive into the ultimate guides to naval history and modern sea power. From iconic US Navy milestones to today's frontline fleets and the world's most legendary warships, these bookazines bring maritime mastery to life.

**ORDER
NOW**



SHOP THE COLLECTION HERE

VISIT shop.kelsey.co.uk/NAVY-BKZ
CALL 01959 543 747 & **QUOTE** SHIPS

See website for terms and conditions and our privacy policy. Customer service hotline is open from 8:30AM – 5:00PM.

